

Author Index to Volume 29

In this index are listed names of authors and titles of their articles and notes. Abstracts of papers read at meetings are designated by the letter (A) after the number of the page on which the abstract may be found. Those papers that have been published only by title are designated by (T). The symbol (L) after an entry signifies a Letter to the Editor.

Adams, Carl E. Role of gaseous cavitation in the nonlinear transmission of sound in liquids—381(A)

Ainslie, D. S. Production of discharge in gas at low pressures by static electricity—574(A)

— Production of discharges in gases by static electricity—857(L)

— Rotating coil magnetometer for the measurement of the earth's magnetic field—333

Atchison, C. J. An experiment in probability—855

Albertson, James Von Neumann's hidden-parameter proof—478

Allen, Gerald F. Recent improvements in the Franck-Hertz experiment—215(T)

Alley, Phillip W. Does industry prefer the B.S. degree to the B.A. degree?—798(A)

Allred, J. C. (see Flores, L. M.)—463

Almy, G. M. Review of *Modern physics buildings—design and function*—860

Alzofon, Frederick E. Optical analogs for heat conduction in solids—572(A)

Ananades, C. S. and J. W. Dewdney. Transistor alpha-particle detector—329

Anderson, C. D. Early work on the positron and muon—825

Andrews, C. L. Report of the membership committee for 1960—714

— Rolling ball analogue for Diode tubes at microwave frequencies—134(A)

Anspaugh, Robert E. What a large school can do to stimulate their outstanding students in science—340(A)

Armstrong, H. L. On prediction as a goal of physical theories—334(L)

Arons, Arnold. Review of *International education in physics*—462

— Review of *Rotation of the earth, a geophysical discussion*—559

Arvin, Martin J. Training of physicists for the master's degree—125

Askovitz, S. I. Graphic methods for obtaining centroids, with applications to mathematical and statistical analysis—571(A)

Auchter, Harry A. Section news: Wisconsin section—868

Auerbach, Isidor. Fluorescent lamp. A teaching device—546

Austern, N. Presentation of Newtonian mechanics—617

Axel, Peter. Review of *Nuclear spectroscopy*—561

Bainter, Monica. Senior research programs—868(T)

Ballard, Stanley S. Proper role of optics in the general physics curriculum—654(A)

Band, William and George E. Duvall. The physical nature of shock propagation—780

Barnes, George. An isochronous pendulum—136(A)

— Section news: Northern California section (Spring 1960)—278

— Section news: Northern California section (Fall 1960)—279

— Section news: Northern California section (Spring 1961)—650

Barney, Delwyn M. A simple electric motor to demonstrate basic principles—279(A)

Barr, E. Scott. Anniversaries in 1961 of interest to physicists—234

— Concerning the naming of the "practical" electrical units—532

— Concerning the naming of some mechanics units—655(A)

Bartlett, Albert A. Review of *Introduction to atomic and nuclear physics*—792

— (see Wells, Chester V.)—215(A)

Barton, Norman. Problems of laboratory operation and the exploding population—379(A)

Barut, A. O. and M. Leiser. Note on gauge transformations in quantum mechanics—24

Beard, David B. Review of *Initiation à la mechanique quantique*—461

Beisner, R. E. Hurwitz-Zweifel formulation of the neutron transport equation in three spatial variables—463(T)

Bekeli, G. and Sanborn C. Brown. Emission of radio-frequency waves from plasmas—404

Benade, A. H. Comments on centripetal force experiment—712(L)

Berman, Arthur I. Astronomical unit as average earth-sun distance—572(A)

Berry, Richard. Electron models and quantum mechanics—798(A)

Bertsch, Carl V. Effects of ultrasonics on the germination and development of seeds—570(A)

Bierman, Arthur. Derivation of the displacement current from the Biot-Savart Law—355

Billman, K. W., J. D. Hayden, Jr., R. C. Levine, and D. A. Luce. Alternating current spark generator for the elementary physics laboratory—367

Bishop, Roy L. (see Magarvey, R. H.)—274

Blackford, B. L. (see Magarvey, R. H.)—274

Blair, Frank. Gamma-ray studies on sun peaks—279(A)

Blitzer, Leon. Review of *From nucleus to universe*—647

— Tension in string supporting a whirling stone—334(L)

Blount, C. E. and D. F. Weeks. Influence of crystal boundaries on the distribution of F centers in sodium chloride—463(T)

Blüh, Otto. Physics for the biologist—771

Boas, Mary L. Apparent shape of large objects at relativistic speeds—283

Bolen, Max C. Effect of pressure upon phase changes in polymer solutions—462(T)

Braden, Patrick O. More hand rules—855

Brady, J. J. (see Skinner, J. G.)—652

— (see Tynes, A. R.)—652

Branson, Lane K. An apparatus for studies of high voltage phenomena—802(A)

Braun, E. A. Some properties of alkali halide crystals—182

Brenzeale, Mack A. Diffraction of light by finite amplitude ultrasonic waves—655(T)

Brennan, James G. The limit of a one-dimensional square well—45

Bridgeman, P. W. Review of *Open Vistas*—556

— The significance of the Mach principle—32

Brillouin, L. Thermodynamics, statistics, and information—318

Broughton, Suzanne. Foucault method of determining the velocity of light in the optics laboratory—797(A)

Brown, Richard L. Variations in a centripetal force experiment—463(T)

Brown, Sanborn C. (see Bekeli, G.)—404

— Report of the treasurer—576

Brown, Thomas B. Design of microwave zone plates—569(A)

Brown, Willard A. Suspension for Foucault pendulum—646(L)

Bryoles, Arthur A. A derivation of the Fermi-Thomas equation—81

Brush, Stephen. Development of the kinetic theory of gases. V. the equation of state—593

Buckley, J. K. and J. J. Hupert. Experimental verification of the gain formula for parametric amplifiers—310

Buffier, C. R., M. W. Muller, and R. H. Kantor. A note on the frequency of ferromagnetic resonance—786

Bullen, T. G. Electric organ as a teaching aid in the general college physics course—372

Bunge, Mario. Laws of physical laws—518

Burch, D. S. The positive column of an electronegative glow—64(A)

Burge, Edward J. Definitions of resonance for series and parallel LCR circuits—19

— Definitions of resonance and exact condition for resonance in some electrical circuits. 2. Tuned coupled circuits—251

Burlibut, James F. Polarization in ultraviolet filters—216(T)

Burnett, C. R. A small perturbation on the degenerate state of general physics—135(A)

Burton, William S. Review of *Science in general education*—557

Author Index to Volume 29

In this index are listed names of authors and titles of their articles and notes. Abstracts of papers read at meetings are designated by the letter (A) after the number of the page on which the abstract may be found. Those papers that have been published only by title are designated by (T). The symbol (L) after an entry signifies a Letter to the Editor.

Adams, Carl E. Role of gaseous cavitation in the nonlinear transmission of sound in liquids—381(A)

Ainslie, D. S. Production of discharge in gas at low pressures by static electricity—574(A)

— Production of discharges in gases by static electricity—857(L)

— Rotating coil magnetometer for the measurement of the earth's magnetic field—333

Atchison, C. J. An experiment in probability—855

Albertson, James Von Neumann's hidden-parameter proof—478

Allen, Gerald F. Recent improvements in the Franck-Hertz experiment—215(T)

Alley, Phillip W. Does industry prefer the B.S. degree to the B.A. degree?—798(A)

Allred, J. C. (see Flores, L. M.)—463

Almy, G. M. Review of *Modern physics buildings—design and function*—860

Alzofon, Frederick E. Optical analogs for heat conduction in solids—572(A)

Ananades, C. S. and J. W. Dewdney. Transistor alpha-particle detector—329

Anderson, C. D. Early work on the positron and muon—825

Andrews, C. L. Report of the membership committee for 1960—714

— Rolling ball analogue for Diode tubes at microwave frequencies—134(A)

Anspaugh, Robert E. What a large school can do to stimulate their outstanding students in science—340(A)

Armstrong, H. L. On prediction as a goal of physical theories—334(L)

Arons, Arnold. Review of *International education in physics*—462

— Review of *Rotation of the earth, a geophysical discussion*—559

Arvin, Martin J. Training of physicists for the master's degree—125

Askovitz, S. I. Graphic methods for obtaining centroids, with applications to mathematical and statistical analysis—571(A)

Auchter, Harry A. Section news: Wisconsin section—868

Auerbach, Isidor. Fluorescent lamp. A teaching device—546

Austern, N. Presentation of Newtonian mechanics—617

Axel, Peter. Review of *Nuclear spectroscopy*—561

Bainter, Monica. Senior research programs—868(T)

Ballard, Stanley S. Proper role of optics in the general physics curriculum—654(A)

Band, William and George E. Duvall. The physical nature of shock propagation—780

Barnes, George. An isochronous pendulum—136(A)

— Section news: Northern California section (Spring 1960)—278

— Section news: Northern California section (Fall 1960)—279

— Section news: Northern California section (Spring 1961)—650

Barney, Delwyn M. A simple electric motor to demonstrate basic principles—279(A)

Barr, E. Scott. Anniversaries in 1961 of interest to physicists—234

— Concerning the naming of the "practical" electrical units—532

— Concerning the naming of some mechanics units—655(A)

Bartlett, Albert A. Review of *Introduction to atomic and nuclear physics*—792

— (see Wells, Chester V.)—215(A)

Barton, Norman. Problems of laboratory operation and the exploding population—379(A)

Barut, A. O. and M. Leiser. Note on gauge transformations in quantum mechanics—24

Beard, David B. Review of *Initiation à la mechanique quantique*—461

Beisner, R. E. Hurwitz-Zweifel formulation of the neutron transport equation in three spatial variables—463(T)

Bekeli, G. and Sanborn C. Brown. Emission of radio-frequency waves from plasmas—404

Benade, A. H. Comments on centripetal force experiment—712(L)

Berman, Arthur I. Astronomical unit as average earth-sun distance—572(A)

Berry, Richard. Electron models and quantum mechanics—798(A)

Bertsch, Carl V. Effects of ultrasonics on the germination and development of seeds—570(A)

Bierman, Arthur. Derivation of the displacement current from the Biot-Savart Law—355

Billman, K. W., J. D. Hayden, Jr., R. C. Levine, and D. A. Luce. Alternating current spark generator for the elementary physics laboratory—367

Bishop, Roy L. (see Magarvey, R. H.)—274

Blackford, B. L. (see Magarvey, R. H.)—274

Blair, Frank. Gamma-ray studies on sun peaks—279(A)

Blitzer, Leon. Review of *From nucleus to universe*—647

— Tension in string supporting a whirling stone—334(L)

Blount, C. E. and D. F. Weeks. Influence of crystal boundaries on the distribution of F centers in sodium chloride—463(T)

Blüh, Otto. Physics for the biologist—771

Boas, Mary L. Apparent shape of large objects at relativistic speeds—283

Bolen, Max C. Effect of pressure upon phase changes in polymer solutions—462(T)

Braden, Patrick O. More hand rules—855

Brady, J. J. (see Skinner, J. G.)—652

— (see Tynes, A. R.)—652

Branson, Lane K. An apparatus for studies of high voltage phenomena—802(A)

Braun, E. A. Some properties of alkali halide crystals—182

Brenzeale, Mack A. Diffraction of light by finite amplitude ultrasonic waves—655(T)

Brennan, James G. The limit of a one-dimensional square well—45

Bridgeman, P. W. Review of *Open Vistas*—556

— The significance of the Mach principle—32

Brillouin, L. Thermodynamics, statistics, and information—318

Broughton, Suzanne. Foucault method of determining the velocity of light in the optics laboratory—797(A)

Brown, Richard L. Variations in a centripetal force experiment—463(T)

Brown, Sanborn C. (see Bekeli, G.)—404

— Report of the treasurer—576

Brown, Thomas B. Design of microwave zone plates—569(A)

Brown, Willard A. Suspension for Foucault pendulum—646(L)

Bryoles, Arthur A. A derivation of the Fermi-Thomas equation—81

Brush, Stephen. Development of the kinetic theory of gases. V. the equation of state—593

Buckley, J. K. and J. J. Hupert. Experimental verification of the gain formula for parametric amplifiers—310

Buffier, C. R., M. W. Muller, and R. H. Kantor. A note on the frequency of ferromagnetic resonance—786

Bullen, T. G. Electric organ as a teaching aid in the general college physics course—372

Bunge, Mario. Laws of physical laws—518

Burch, D. S. The positive column of an electronegative glow—64(A)

Burge, Edward J. Definitions of resonance for series and parallel LCR circuits—19

— Definitions of resonance and exact condition for resonance in some electrical circuits. 2. Tuned coupled circuits—251

Burlibut, James F. Polarization in ultraviolet filters—216(T)

Burnett, C. R. A small perturbation on the degenerate state of general physics—135(A)

Burton, William S. Review of *Science in general education*—557

Carr, Howard. Section news: Southeastern section—653

Carr, Joseph A. Demonstration of Brownian motion and other difficult phenomena on closed circuit television—571(A)

Casaverde, Mateo. Introduction to geomagnetism: the equatorial electrojet—744

Caughlan, Georgeanne R. (see Towe, George C.)—706
— (see Towe, George C.)—777

Cerny, Laurence C. The absolute viscosity of water—708

Chamberlain, L. I. (see McLachlan, Dan, Jr.)—385

Chambers, L. G. Some applications of Schwinger's principle—856

Charest, Jacques. Hypervelocity studies—380(T)

Chen, Henry S. C. A note on the introduction of the magnetic pole in the mks system—134(A)

Chow, B. H. Supplemental viewpoints of the relativistic length contraction and time dilation helpful to the teaching of introductory special relativity—634

Christy, R. W. (see Harris, J. D.)—136(A)
— and W. P. Davis. A student magnifying manometer—128

Clancy, Edward F. A cooperative venture in the philosophy of science—95
— Cooperative venture in the philosophy of science—572(A)

Clark, Clifton Bob. A college teacher looks at the PSSC physics course—462(T)
— Undergraduate curricula for physics majors in a select sample of institutions—219

Cole, Richard W. Section news: Western Pennsylvania section—463

Collins, Bowman C. A "Cape Canaveral Type" activity during a laboratory period—279(A)

Collins, D. G. Secondary neutrons from Van Allen protons—463(T)

Collins, R. E. Integral formulation of the Navier-Stokes equation and applications to flow through porous media—463(T)

Compton, Arthur H. The scattering of x rays as particles—817

Condon, E. U. Graphical representation for unit systems—487

Cook, Thomas T. and Robert Mueller. The lengthening pendulum—868(A)

Coon, J. B. (see Young, B. T.)—463
— R. Dewames and C. M. Loyd. Application of the Franck-Condon principle to the XY₂ molecule—463(T)

Correll, Malcolm. Your AAPT in 1961 (*Editorial*)—70
— Proceedings of the American Association of Physics Teachers—Summer Meeting at Oberlin College, Ohio, June 22-25, 1960—132
— Commission on college physics teaching—653(T)
— Proceedings of the association—thirtieth annual meeting—565

Cottrell, Don. High-energy cosmic-ray experiments at balloon elevations—379(A)

Couchman, J. C. Atmospheric diffusion of radioactive aerosols—463(T)

Cox, R. T. Review of *Kinetic theory of gases*—649

Crawford, George W. Graduate preparation of physics instructors for liberal arts colleges—573(A)

Cross, Judson B. Review of *Quality science for secondary schools*—861
— Review of *The book of the atom*—650

Crowell, A. D. Observation of a time interval by a single observer—370

Daly, Raymond A. and Bert J. Hill. Basic semiconductor experiments—571(A)

Davis, Sumner P. Photoelectric effect experiment—706

Davis, William P., Jr. Nonsecret laboratory examinations—II—788
— (see Christy, R. W.)—128

Day, John A. Concurrent use of Sears/Zemansky college and university physics texts—712(L)

Dayton, Irving E. The Pierre S. du Pont science building—753
— and M. A. Heald. Review of *Elements of physics*—719

del Rio, C. Sanchez (see Galind, A.)—582

Derby, Stanley K. (see Kruglak, Haym)—371

Dethlefsen, Edwin S. "Gravity" demonstration using a magnetic field—549(L)

Dewames, R. (see Coon, J. B.)—463

Dewdney, John W. The domino rule—a way of handling relative velocities—249
— (see Ananias, C. S.)—329

Dewitt, Jacob P. Apparatus review: Stroboscopic camera and accessories—332

Dreesen, James A. Review of *Electromagnetic fields, energy, and forces*—562

Dicks, John B. Example and demonstration of velocity-dependent potential in classical mechanics—654(A)

Dietrich, Verne E. Proposal for joint seminars for colleges—868(A)

Duvall, George E. (see Band, William)—780

East, Larry V. and Paul A. Boys. Classical approach to Mott scattering—548
— Decade scaler for college laboratory use—307

Ebbighausen, E. G. The mystery of beta persei—64(A)

Edwards, John E. Versatile curved-crystal spectograph for the x-ray physics laboratory—572(A)

Edwards, P. L. and R. J. Happel. Beryllium oxide microcrystals—463(T)

Eich, Alfred M., Jr. An optical bench light source—787

Eleckhorn, Heinrich K. Review of *Introduction to celestial mechanics*—563

Enck, Frank D. Introduction to the M-B, B-E, and F-D physical statistical distributions—797(A)

Eppenstein, Walter. More visual aids in the physics lecture—134(A)
— and Richard M. Heavers. Hall effect in the general physics laboratory—574(A)

Erickson, Willard L. Electronics in general physics—216(T)

Estin, Robert W. Free expansion of an ideal gas—340(A)

Ettinger, Robert. Proposed method for measuring the speed of propagation of gravitational waves—655(T)

Fahy, Edward F. On the tight packing of spheres and associated problems in flat N-dimensional space—725

Fairchild, Clifford E. Emission and absorption by afterglowing nitrogen and oxygen in the extreme ultraviolet—379(A)

Fano, U. Quantum theory of interference effects in the mixing of light from phase-independent sources—539

Faris, John J. Demonstration of paramagnetic susceptibility—215(T)
— Reception in microwave horns—380(T)

Fegley, Ron. Coulomb's law—279(T)

Fields, R. E. Surface deposition of aerosols—463(T)

Filler, Aaron S. Primary aberrations of mirrors—687

Filz, C. J. (see Tynes, A. R.)—65

Finley, Lyle W. Section news: Illinois section—380

Flores, L. M. and J. C. Allred. Temperature of a helium plasma—463(T)

Poland, W. D. On characteristics of materials and the Millikan oil-drop experiment—787

Fong, Peter. Representation of the commutation relation—852

Foster, J. G. Midwinter term at Florida Presbyterian College—654(A)

Fowler, R. A. and H. S. Story. A mechanical analog of magnetic resonance—709

Fowler, William A., Jesse I. Greenstein, and Fred Hoyle. Deuteronomy: Synthesis of deuterons and the light nuclei during the early history of the solar system—393

Franch, B. L. and M. B. Wells. Calculations of the spatial, energy, and angular distributions of weapons radiation—463(T)

Franke, Ernst K. Review of *Fortschritte der Hochfrequenztechnik*, Vol. 4—864

Freeman, Ira M. Review of *Physics, foundations and frontiers*—60

French, Walter R., Jr. Apparatus review: The Finescale magnifying comparator—273

Friskopp, R. G. and Arne Eld Sandström. The education of physicists in Sweden—168

Fuller, Melvin O. Electricity demonstrations with the overhead projector—279(T)

Furman, W. L. Physics in the universities of Colombia—654(A)

Furry, W. H. Review of *Relativistic electron theory*—866

Gaines, Newton. Cardinal characteristics of the scientific method taught freshmen at the force table—463(T)

Galindo, A. and C. Sanchez del Rio. Intrinsic magnetic moment as a nonrelativistic phenomenon—582

Garrison, William R. A high-school teacher looks at the PSSC physics course—462(T)

Goldfarb, Albert M. On the education of physicists in Austria and Israel—161

Goldman, Robert (see Moore, Neal)—645

Goldwasser, E. L. Plans for a collaborative effort to improve college physics—380(T)

Gordon, G. D. Elementary satellite thermal problems—574(A)

Gould, Robert K. The phenomenon of acoustic streaming and its effects on various processes—798(A)

Greenstein, Jesse I. (see Fowler, William A.)—393

Gross, Eric T. B. Carnot efficiency as parameter in thermoelectric conversion—867(A)

— A critical view of science fairs—868(A)

— Efficiency of thermoelectric devices—729

Grossberg, Alan B. An outline of an electronics course for physics students—868(A)

Guest, P. G. Characteristics tracer—287

Hadley, Lawrence N. The C.S.U. Saturday morning high school science lectures—215(T)

— Is a textbook picture equivalent to a demonstration?—380(A)

Hadsell, Frank. Changes in crustal temperature due to sedimentation—380(T)

Ham, Joe S. and Kenneth J. Hughes. Effect of pressure upon the swelling of cross-linked polymers—463(T)

Ham, Lloyd B. Open book examination as a deterrence to cheating—639

Hamlin, Charles N. Hamilton's principle and varied paths—573(A)

Hanau, Richard. Section news: Kentucky section—381

— Section news: Kentucky section—653

Hanson, R. C. Hall mobility of holes in AgBr—652(A)

Happ, W. W. Circuits of the future—what can we teach now about microsystem electronics—652(T)

— Photo-voltaic energy converters for space vehicles—280(T)

Happel, R. J. (see Edwards, P. L.)—463

Harper, Jos. P. Scattering of beta rays—797(A)

Harris, Franklin S., Jr. and Claude J. Hooper. New laboratory friction experiment using model automobiles—804(A)

Harris, J. D. and R. W. Christy. A simple argument for the temperature dependence of transport coefficients in imperfect gases—136(A)

Hawkins, David. Review of *Structure of science*—716

— Review of *Transmission of information*—793

Hayden, J. D., Jr. (see Billman, K. W.)—367

Hayn, Carl H., S.J. Apparatus for study of x-ray diffraction—651(A)

Heald, M. A. (see Dayton, Irving E.)—719

Heavers, Richard M. (see Eppenstein, Walter)—574

Hebel, L. C. Review of *The principles of nuclear magnetism*—860

Hecht, K. Collision experiments in shadow projection—636

— Experiments on electronics—575(A)

Hellmann, John J. Section news: Central Pennsylvania section—797

Helms, R. M. Review of *Units, dimensions, and dimensionless numbers; How to solve physics problems; Dimensions, units, and numbers*—796

Hill, Bert J. (see Daly, Raymond A.)—571

Hill, Otto H. Effects of reactor radiation on the upgrading of impure silicon—463(T)

Hill, Robert Nyden. Elementary derivation of the electron-electron interaction via the phonon field—739

Hill, William A. What a small school can do to stimulate their outstanding students in science—340(A)

Hilton, Wallace A. Construction and use of a Fabry-Perot interferometer—572(A)

— Emanation electroscope—789

Hoffman, Dennis G. Elastic scattering of deuterons—64(A)

Hoffmann, Banesh and Wayne T. Sproull. Clock rates at perihelion and aphelion—640

Hogg, B., D. Kerr, and L. Reed. A charged particle spectrometer for an undergraduate laboratory—57

Holton, Gerald. On the recent past of physics—805

Holzm, Mark. Note on Lorentz invariants—335(L)

Hooper, Claude J. (see Harris, Franklin S., Jr.)—804

Howe, Richard H. Apparatus review: Triode demonstrator unit—640

Howey, Joseph H. A phase demonstrator for waves—135(A)

Hoyle, Fred (see Fowler, William A.)—393

Hughes, Kenneth J. (see Ham, Joe S.)—463

Hulsizer, Robert I. College physics teaching improvement program—653(A)

— Film appraisals requested—248

Hupert, J. J. (see Buckley, J. K.)—310

Huse, Guy. (see Meiners, Harry F.)—803

Ibser, Homer W. Simple crane for general physics laboratory—279(T)

Iona, Mario. Demonstration of the electromagnetic definition of **B**—708

— Demonstration of the electromagnetic definition of **B**—380(T)

— Experiment on Compton effect—571(A)

— Some problems in intermediate mechanics—215(T)

Ise, John. (see Uretsky, Jack L.)—328

Isham, Rex and D. F. Weekes. Thermal activation energies of KBr and LiF—463(T)

Jackson, Howard. Section news: Michigan section—655

Jaggard, R. A. NSF institutes for physics high school teachers—868(T)

Jan, Jenn-Pierre. Rapid determination of the constants of a galvanometer—373

Janis, Allen I. Concept of observables in general relativity—463(T)

Janzen, Donald (see Schwartz, Manuel)—381

Jaynes, Edwin T. Review of *Statistical theory of communication*—276

Jensen, Harald C. Report on the 1960 summer workshop on new physics apparatus at Rensselaer Polytechnic Institute—340(A)

Jeppesen, Myron and William A. Sloan. Optical observation of ferrimagnetic domains—789

Johnson, H. J. An experiment in partial advanced placement—867(A)

Jones, Robert T. Conformal coordinates associated with uniformly accelerated motion—124

Kahn, Arnold H. Phase-shift method for one-dimensional scattering—77

Kane, Richard A. Review of *College physics*, 3rd edition—62

Kantor, R. H. (see Buffer, C. R.)—786

Karioris, Frank G. Advanced undergraduate physics laboratory—868(A)

Katz, Malcolm. Hints for visiting scientists teaching in secondary schools—57

Katz, Robert. Transverse mass and gravitational mass—786

Kaufman, Allan N. Definition of macroscopic electrostatic field—626

Keller, J. W. (see Miller, R. A.)—463

Kenworthy, R. W. Reports on the San Francisco meeting of the acoustical society—379(T)

Kerlee, Donald D. Section news: Washington section—379

Kerr, B. (see Hogg, B.)—57

Kestin, J. On intersecting isentropes—329

Kinerk, Harry. Physics at the University of Palermo—379(T)

King, Allen. Laboratory problem in projectile motion—547

— Review of *Electricity and magnetism*—62

— Review of *Electrodynamics of continuous media*—647

— Review of *Turning points in physics*—794

Kirkpatrick, Paul. Aerodynamics of the spinning baseball—573(A)

— Review of *Careers in physics*—60

— Review of *X-Ray microscopy and x-ray microanalysis*—793

— Scales and how to read them—571(A)

Kline, John V. Centrifugal force—802(A)

— Physical pendulum experiment for sophomores—134(A)

— Physical pendulum experiment for sophomores—380(T)

— Section news: Colorado-Wyoming section—380

Kolb, Kemp Bennett. PSSC physics—791(L)

Kruglak, Haym and Stanley K. Derby. Inexpensive, compact, and versatile source of ultraviolet and visible mercury lines—371

Kruschwitz, Walter H. Research and its sponsorship in undergraduate college physics—134(A)

— Some aspects of research in undergraduate college physics departments—654(A)

— Undergraduate college physics research and its sponsorship—83

Kruse, Olan E. Hearing and seeing beats—645(L)

Kunz, Barry. Optical pumping in metastable helium—798(A)

Laffineur, Marius. Radio astronomy—198

Lancaster, Otis, Kenneth Manning, and Marsh White. Evaluation of the relative merits of lecture and recitation periods in the teaching of college physics—574(A)

Landé, Alfred. Unitary interpretation of quantum theory—503

Landsberg, P. T. The definition of the perfect gas—695

Lanza, Giovannni. Review of *Electromagnetic energy transmission and radiation*—214

Lavie, A. (see Lindeman, H.)—705

Le Corbeiller, P. Review of *An elementary treatise on curve tracing*—649

Leffler, Glenn Q. Report of annual meeting of the national commission on teacher education and professional standards, San Diego State College, San Diego, California, June 21-25, 1960—331

Lehman, Margaret B. Special consultant at work—573(A)

Lehmburg, R. H. Axiomatic development of the laws of vacuum electrodynamics—584

Leifson, S. W. Dynatron oscillator for Lissajous figures—278(A)

— Roverval balance—652(T)

Leiser, M. (see Barut, A. O.)—24

Lemos, Anthony M. Neutron-proton mass difference from electric self-energy consideration—867(A)

Levine, R. C. (see Billman, K. W.)—367

Lewis, Lester Clark. Physics of spheres as basic physics: how use it?—570(A)

Licht, Seymour. (see Zajac, Alfred)—669

Lichtenberg, D. B. Low-energy predictions of modified Yukawa potentials between two nucleons—357

Lindeman, H. and A. Lavie. An instrument for the measurement of the heat of vaporization of water—705

Long, Vernon L. Section news: Oregon section—652

— Section news: Oregon section—723

Low, F. E. Correspondence principle approach to radiation theory—298

Loyd, C. M. (see Coon, J. B.)—463

Luce, D. A. (see Billman, K. W.)—367

Lustig, Harry. The Mössbauer effect—1

Lysiak, Richard J. Apparent frequencies and displacement, velocity, and acceleration in random vibrations—463(T)

McCauley, Graham. Parity—173

McCay, Myron S. Review of *Mechanics and properties of matter*, 2nd edition—213

— “Close-range” forces in the “Plum-pudding” model—654(A)

McClain, William C. (see Rinehart, John S.)—215(A)

McGar, Frank, Jr. Review of *Structure and change, an introduction to the science of matter*—128

McEllistrem, M. T. (see Marsongkohadi)—382

McLachlan, Dan, Jr., and L. I. Chamberlain. Geometrical approach to the theory of probability—385

McMillan, Juan A. Paramagnetism: A key to the knowledge of chemical bonding—207

McMillen, J. Howard. Research programs in non-Ph.D. granting institutions—108

— Small colleges and physics research (Editorial)—272

McVittie, G. C. Review of *On motion and on mechanics*—336

— Review of *Rival theories of cosmology*—554

Macracken, Elliot. Thermocouple with unidirectional characteristics—65(A)

MacDonald, D. K. C. Statement of the laws of thermodynamics—126(L)

Magarvey, R. H., Roy L. Bishop, and B. L. Blackford. The time interval in the Clement and Desormes experiment—274

Mahendroo, P. P. and A. W. Nolle. Nuclear magnetic relaxation in ionic crystals at elevated temperatures—462(T)

Mahon, H. P. Acoustic attenuation measurements in NaCl—380(A)

Manning, Kenneth. (see Lancaster, Otis)—574

Mapother, Dillon E. On the Kelvin and perfect gas temperature scales—858(L)

Marceley, Robert G. Apparatus drawings project. Acceleration carts and track—294

— Apparatus drawings project. Apparatus for electron paramagnetic resonance at low fields—492

— Apparatus drawings project. Apparatus for measuring the Rutherford scattering of alpha particles by thin metal foils—349

— Apparatus drawings project. Classen's method e/m of electrons apparatus—26

— Apparatus drawings project. Hall effect magnet—29

— Apparatus drawings project: Ionization chamber—845

— Apparatus drawings project. Large electromagnet constructed for use at the California Institute of Technology—86

— Apparatus drawings project. Nuclear magnetic resonance absorption apparatus—451

— Apparatus drawings project. Omegatron for undergraduate laboratory determination of the ration e/m of the proton—90

— Apparatus drawings project. Small x-ray tube—445

— Apparatus drawings project. Versatile electric stop clock control system—498

Marn, Donald (see Silvilli, Anthony A.)—99

Marsongkohadi and M. T. McEllistrem. Discrimination between neutron and gamma-ray pulses in an anthracene scintillator—382(A)

Martin, Robert L. Some properties of the bleaching of the colloidal band in silver chloride—65(A)

Mason, C. L. Simple Schlieren demonstration—642

Maxwell, Howard N. Experiment for premedical students using the student potentiometer—642

— Determination of the angular speed of the Leybold rotating mirror—711

Mazurek, Henry E. (see Picard, Robert G.)—572

Meiners, Harry F. and Stanley A. Williams. Classical electron “scattering” process—135(A)

Meiners, Harry F., Alan S. Meltzer, Charles C. Werberg, and Guy Huse. Report on the film program at Rensselaer Polytechnic Institute—803(A)

Mellen, Walter Roy. Flying umbrella—459

Meltzer, Alan S. (see Meiners, Harry F.)—803

Meyer-Arendt, Jurgen B. and John K. Wood. Light-optical analog of x-ray diffraction patterns—341

Michels, W. C. Report of the Editor for the year 1960—469

— A vicious circle (Editorial)—851

Michener, William H. Has physics teaching kept up with physics?—463(A)

— Apparatus review: Thermoelectric generator—273

Miller, Julius Sumner. A constantly available soap film—713(L)

— Men and events of science commemorated on postage stamps—571(A)

— Observations on the thermal conductivity of carbon dioxide gas—549(L)

Miller, R. A., J. W. Keller, and T. A. Moss. Radiation shielding for space vehicles—463(T)

Mills, Blake D., Jr. A simple mechanical analogy for isothermal compression of liquids and solids—741

Miner, Thomas D. Review of *Physics*—338

Miyakawa, Kozaburo. Graviton theory—215(T)

Moore, Emmett B., Jr. Report on the Boeing scientific research laboratories—379(A)

Moore, Neal and Robert Goldman. Paradox of the reciprocal Carnot relationship—645(L)

Morrow, Roger M. Selling physics—380(T)

Moss, T. A. (see Miller, R. A.)—463

Mostovych, N. (see Naber, C. T.)—381

— (see Nichols, B.)—381

Mueller, Robert (see Cook, Thomas T.)—868(A)

Muldawer, L. Comparative preparation of physics and mathematics teachers in NSF institutes—460(L)
 — Comparative preparation of physics and mathematics high school teachers in NSF institutes—574(A)
 — Institutes in research techniques—276(L)

Muller, M. W. (see Buffler, C. R.)—786

Mullin, A. A. Review of *Elementary matrices and some applications to dynamics and differential equations*—555
 — Review of *Field theory for engineers*—717
 — Review of *Information retrieval and machine translation, in two parts, Part I*—376
 — Review of *Introduction to the statistical dynamics of automatic control systems*—555
 — Review of *Symposium on active networks and feedback systems*—717
 — Review of *Transistor logic circuits*—794

Muss, D. R. Mechanical properties of cantilevered fine wires—463(T)
 — Synchronous clock versus radio beep—463(A)

Myers, Arthur. The use of high-frequency sound waves in the investigation of some electronic properties of metals—143

Naber, C. T. and N. Mostovych. Effect of an aluminum oxide undercoating on the electrical properties of thin metallic films—381(A)

Nassar, Salwa. Physics in the middle east—655(T)

Neher, H. V. Busch tube for determining e/m for the electron—471
 — Light pressure tube—666
 — Review of *Science in space*—791

Nelson, C. W. Relativity nomograph—278(A)

Nemirow, D. M. Basic measurements of small magnetic flux—651(A)

Nichols, B. and N. Mostovych. Activation energy of thin germanium films—381(A)

Nicodemus, David B. Double refraction in calcite—802(A)

Noehl, John. Advanced placement in physics—652(A)

Nolen, Jerry A., Jr. An application of the hot wire anemometer in shock tube work—798(A)

Nolle, A. W. (see Mahendroo, P. P.)—462

Norris, David D. Motivating experiments in mechanics—803(A)

Nussbaum, R. H. European organization for nuclear research—64(A)

O'Connor, R. T. Section news: Chicago section—339
 — Section news: Chicago section—867

Offenbacher, Elmer L. The 1960 visiting foreign staff project (V.F.S.P.) at Temple University—137

Ogier, W. T. Elementary junction transistor amplifiers—802(A)

Ogren, J. B. Uptake of radioisotopes—651(A)

Ojalvo, I. U. Relativistic oscillator with natural forcing functions—508

O'Leary, Austin J. Condition that temperature defined by an equation of state be equal to absolute thermodynamic temperature—852

Olsen, Leonard O. Citations for distinguished service—476

Ortiz, Eddie. Determination of the binding energy of deuteron—575(A)
 — Students method for determining the binding energy of deuteron—684

Overbeck, C. J. Apparatus review: Demonstration thermometer—368
 — Physics and physicists in industry—340(A)

Page, Thornton. Review of *From atoms to stars*—61
 — Review of *Science since Babylon*—863
 — Review of *A textbook on light*—648

Pake, George E. Can four year colleges prepare physics majors for graduate work in physics?—678

Palmer, R. Ronald. The AAPT buildings project—868(A)

Patterson, A. L. Review of *Crystals and crystal growing*—127

Payne, William T. Review of *Lectures in theoretical physics, Volume I*—129

Pearlstein, Edgar A. A comment on "On teaching the philosophy of physics?"—127(L)

Peckham, Donald C. (see Romer, Alfred)—722

Perry, B. L. Field emission from silicon—64(A)

Peterson, D. M. Mechanisms and calculation of radiation heating—463(T)

Phillips, Melba. Review of *Physics, the pioneer science*—563

Picard, Robert G. and Henry E. Mazurek. Projection cloud chamber for classroom demonstration—572(A)

Piekara, Arkadiusz. Physics education in Poland—764

Pillsbury, Dale. An electronic analog computer demonstration—279(T)
 — Method of light loss in photomultiplier tubes—651(A)

Platt, John B. On maximizing the information obtained from science examinations written and oral—111

Plumb, L. R. Some observations on crossed meshes—651(A)

Pohl, R. O. (see Pohl, R. W.)—369

Pohl, R. W. and B. O. Pohl. Another hydrostatic paradox—369

Potter, J. G. National picture of physics training programs—463(T)

Prowse, D. J. A note on the Welch scattering apparatus—854

Pugh, Emerson M. Conservative fields in dc networks—484

Railsback, O. L. Apparatus review: Projection meter—374

Ramer, C. E. and H. K. Reynolds. Sputtering of copper at high energies, 20–160 kev—463(T)

Rapier, Pascal M. Laboratory determination of velocities by means of a primary standard—279(A)

Raz, James B. Review of *Mechanics*, second edition—720

Reed, L. (see Hogg, B.)—57

Reid, Walter P. Floating a long square log—655(T)

Remillard, W. J. Anatomy of thunder—573(A)

Reynolds, H. K. (see Ramer, C. E.)—463
 — (see Skiff, P. D.)—463
 — Section news: Texas section—462

Richards, Roderick D. Nuclear reactor technology program for summer '61 at Jackson Junior College—655(A)

Riley, C. S. and E. F. Sieckmann. Expansion of the point charge rock salt lattice potential in kubic harmonics—381(A)

Bindler, W. Length contraction paradox—365
 — and D. W. Schama. Radiation pressure on a rapidly moving surface—643(L)

Rinehart, John S. Physics in mining research—381(A)
 — and William C. McClain. Simple method for determining Poisson's ratio dynamically—215(A)

Robinson, Berol L. Collisions of relativistic particles—369

Robinson, J. M. Comment on "Demonstration of energy in an inelastic collision?"—335(L)

Rockwell, Clarence. Section news: Colorado-Wyoming section—215

Rogers, Eric M. Physics summer institute in Pakistan—661

Rollins, Jerrett. With apologies to Mr. Boyle—279(A)

Romer, Alfred. Review of *Discourse on bodies in water*—558
 — and Donald C. Peckham. Review of *Modern university physics*—722
 — Functional dependence: Three introductory experiments—630
 — Uniform acceleration apparatus—211

Rose-Innes, A. C. and G. M. Taylor. Experiments on the angular momentum of a supercurrent and the possibility of a supercurrent gyroscope—268

Ross, James H. Experimental physics—279(A)

Rossing, Thomas D. Velocity of wave propagation experiment—123

Rouse, Arthur G. Momentum experiment for the laboratory—635

Roys, Paul A. (see East, Larry V.)—307
 — (see East, Larry V.)—548

Rozyczyk, Henry J. Let's use the metric system—380(A)

Ruby, Lawrence. Pulsed neutron experiments in the student laboratory—801(A)

Ruddick, James J. Is modern physics "science for nonscience majors?"—571(A)

Sadowski, Henry (see Zajac, Alfred)—669

Salto, Nobuhiko. On the theory of condensation—64(A)

Salem, S. I. Effective depth of formation of K radiation—463(T)

Samuelson, A. G. The conical pendulum again—790(L)
 — Tension in string supporting a whirling stone—58(L)

Sandström, Arne Eld. (see Friskopp, K. G.)—168
 — Some geophysical aspects of cosmic rays—187

Sartain, Carl C. Laboratory measurement of the mass and diameter of a copper atom—572(A)
— Mass and size of the copper atom by electrolysis—279(T)

Sawyer, Raymond B. A pulse method of measuring the thermal diffusivity of metals—797(A)
— Review of *Heat and thermodynamics*—560

Sayvetz, Aaron. Evolution of matrix mechanics—575(A)

Scarff, Frederick L. Wave propagation in a moving plasma—101

Schaeffer, N. M. Shielding aspects of nuclear aircraft—463(T)

Schaer, Oliver K. Physics in technology at lower Columbia College—379(A)

Schauer, Charles H. "It is more blessed . . ." (Editorial)—633

Schenck, Hilbert, Jr. A useful thermodynamic diagram—703

Schillinger, Edwin J. The Mössbauer effect—868(A)

Schlegel, Richard. Radiation pressure on a rapidly moving surface—645(L)

Schwarz, Guenter. Present status of the physical science study committee's program for the improvement of high-school teaching—653(T)

Schwartz, Manuel and Donald Janzen. Influence of surface layers on sound absorption of open-celled flexible foams—381(A)

Schwartz, W. M. Review of *Foundations of electromagnetic theory*—337

Schwetman, Herbert D. Consistent use of hand rules—367

Selama, D. W. (see Rindler, W.)—643

Scott, F. R. Review of *Physics of the solar chromosphere*—791
— Review of *Plasma acceleration*—336
— Review of *The theory of neutral and ionized gases*—378

Seriven, Michael. Review of *Philosophy of science*—556

Sears, Francis W. International conference on physics education—151
— Jerrold Reinach Zacharias: Oersted Medalist for 1960—345
— A model Foucault pendulum—136(A)

Seeger, Raymond L. Further comment on the teaching of the philosophy of physics—127(L)
— Nature study in physics teaching—674
— Review of *An introduction to the theory of vibrating systems*—866
— Review of *Fluid dynamics*—129
— Review of *Principles of fluid mechanics*—861
— Review of *Toward modern science*—867

Seifert, Howard S. The stop-light dilemma—803(A)

Seren, Leo. Graphite exponential pile as a pedagogical device for studying anisotropic diffusion—572(A)

Shankland, R. S. Acoustical problems of physics lecture halls—136(A)

Sherman, Noah. Review of *Introduction to the theory of ionized gases*—648

Sherwin, C. W. Regarding the observation of the Lorentz contraction on a pulsed radar system—67

Shirer, Donald L. Sophomore laboratory error analysis—459(L)
— Using a small analog computer as a classroom aid—136(A)

Steckmann, E. F. Preliminary calculations of wave functions and energy eigenvalues for He^+ in a rock salt lattice—382(A)
(see Riley, C. S.)—381

Silivdi, Anthony A. and Donald Marn. A diffusion cloud chamber with a vacuum jacket—99

Simpson, Thomas K. The role of physics in the 'Great Books' program at St. John's College—135(A)

Skiff, P. D. and H. K. Reynolds. Sputtering of monocrystalline copper—463(T)

Skinner, J. G. and J. J. Brady. Effect of flow on microwave breakdown in O_2 —652(A)

Sloan, William A. (see Jeppesen, Myron)—789

Smith, Clarence R. The use of standard panels for optical devices in the school laboratory—340(A)

Smith, Louis E., Jr. A contrast-field polaroid polarizer—802(A)

Smith, Malcolm K. Review of *The amateur scientist*—377

Smith, P. Scott. Nonconservation of parity—380(T)

Snow, Edward. (see Youngman, L. A.)—463

Solbrig, A. W., Jr. Doppler effect in neutron absorption resonances—257

Sordelli, B. A. Teaching of physics in Argentina—574(A)

Sproull, Wayne T. (see Hoffmann, Banesh)—640

Srivastava, Surendra N. A new theorem for moment of inertia—211

Stahl, Frieda. Preschool physics—579

Steginsky, Bernard. Dynamics of ionized gases—605

Stendler, Celia B. Cognitive development in children and readiness for high school physics—832

Stern, David. An optical analog to the motion of magnetically trapped particles—767

Stewart, Albert B. Circular motion—373

Stockman, Harry E. Dunking duck without liquid—335(L)

Stockman, Harry E. Secret of the dunking duck—374(L)

Story, H. S. (see Fowler, R. A.)—709
— Simple charge motion demonstrator—569(A)

Straley, Joseph W. Apparatus review: Hydrogen lamp—856
— On making lecture-recitation-laboratory work—654(A)

Strickler, Thomas D. Variation of the homopolar motor—635

Sutton, Richard M. Bringing Kepler into the laboratory—803(A)
— A reversed loop-the-loop—48

Svonavec, Michael. Innovation and modification of Lami's theorem—340(A)

Swann, W. F. G. The history of cosmic rays—811

Swigart, J. I. Displacement in conductors—803(A)

Taylor, G. M. (see Rose-Innes, A. C.)—268

Taylor, H. W. and G. N. Whyte. Student experiment on the attenuation of gamma radiation—315

Terrell, James. Radiation pressure on a relativistically moving mirror—644(L)

Thomas, T. S. E. The screening effect of a circular disk—37

Thomsen, John S. An operational definition of the second law of thermodynamics—300

Thomson, Sir George. Early work in electron diffraction—821

Todd, Jarvis. An elementary view of two central-force problems—279(T)

Towe, George C. and Georgeanne R. Caughlan. Boyle's law experiment for general physics laboratory—706
— Laboratory performance testing—777

Trigg, George L. Review of *Non-relativistic quantum mechanics: an introduction*—375

Tubbs, Eldred F. Demonstration of diffusion—802(A)

Turner, Louis A. Comments on Buchdahl's treatment of thermodynamics—40

Tynes, A. R. and C. J. Fliz. Conversion of a commercial spectrophotograph for photoelectric scanning—65(A)

Tynes, A. R. and J. J. Brady. Light emissions in early states of plasma formation—652(A)

Turner, L. A. The zeroth law of thermodynamics—71

Uretsky, Jack L. and John Ise. Erratum: Vacuum electrodynamics on a merry-go-round—328

Van Bladel, J. Magnetostatic fields at an iron-air boundary—732

VanKranendonk, J. Induced infrared absorption—655(T)

Van Name, F. W., Jr. Review of *Fundamental physics*—460

Verbrugge, Frank. Annual business meeting—468
— Minutes of the annual meeting of the council—466
— Performance in college physics of students with PSSC background—570(A)
— Summer Meeting at Stanford University, Stanford, California—799

Vodar, B. Education of a scientist in France—64(A)

Waddell, Robert C. Parallel resonance in "low-Q" circuits—380(T)

Wager, Alan T. Preliminary report of course offerings in institute programs sponsored by the National Science Foundation—573(A)

Walters, John H. Centripetal force apparatus—212(L)

Wangness, Roald K. Review of *Introduction to solids*—647

Warburton, Fred. Uptodateness in the classroom—570(A)

Ward, Gilbert H. A new kinetic energy demonstration—709
— A new kinetic energy demonstration—798(A)

Warner, R. M. Fermi level demonstration—529

Warner, Robert E. Measurement of molecular constants in the elementary laboratory—573(A)
 — Measurement of molecular diameters and average velocities—736
 — Statement of the first law of thermodynamics—124

Warren, Carlos. Spectra of fast neutrons through water—462(T)

Watson, Robert B. The addition to the physics building at the University of Texas—50

Webb, Robert H. Steady-state nuclear polarizations via electronic transitions—428

Weber, Robert L. Films for students of physics—222
 — Review of *Space and the Atom*—862

Webster, David L. Relativity and parallel wires—841
 — The relativity of moving circuits and magnets—262

Weeks, D. F. (see Blount, C. E.)—463
 — (see Isham, Rex)—463

Weinstock, Robert. The laws of classical motion: what's F ? what's m ? what's a ?—698
 — Post-use review of: *Physics for students of science and engineering*—717
 — An unusual method for solving the harmonic-oscillator equation—803(A)
 — An unusual method of solving the harmonic-oscillator equation—830
 — What's F ? What's m ? What's a ?—569(A)

Wells, Chester V. Further laboratory studies of the Compton effect—215(A)

Wells, M. B. (see Franch, R. L.)—463

Wells, Willard H. Length contraction paradox—858(L)

Weltin, Hans. A paradox—711
 — Demonstration of Doppler effect—713(L)

Werberig, Charles C. (see Meiners, Harry F.)—803(A)

Western, G. T. Total absorption gamma spectroscopy—463(T)

Whaling, Ward. Review of *Atomic and nuclear physics*—213

White, Harry J. Research activities at Research Corporation—653(A)

White, Marsh W. Distribution of time in general physics courses—134(A)
 — (see Lancaster, Otis)—574
 — Distribution of time in general physics courses—291
 — Objective-type tests for short daily quizzes—463(A)

Whitteker, James. Elementary analysis of the gyroscope—550(L)

Whyte, G. N. (see Taylor, H. W.)—315

Wickett, Walton A. The ostentatious water skier, the ambitious pole vaulter, and the perplexed tennis player—280(T)

Williams, Stanley A. (see Meiners, Harry F.)—135(A)

Williamson, Charles. Olin-Mathieson plan for high school science—574(A)
 — Review of *Optics and optical instruments*—555
 — Review of *Principles of electricity and magnetism*—213
 — Review of *A history of science, technology, and philosophy in the 18th century*—795
 — Review of *A short history of technology*—649
 — Review of *Planning for excellence in high school science*—865

Winans, J. Gibson. Convenient equations for projectile motion—623

Winch, Ralph. Proceedings of American Association of Physics Teachers. Revision of the constitution and by-laws—658

Wood, John K. (see Meyer-Arendt, Jürgen R.)

Wood, Sam. Report on the physics section of the science conference of Tennessee state colleges and universities—653(A)

Worrell, Francis T. Are we asking the right questions?—572(A)
 — Review of *Basic electrical measurements*—376
 — Review of *Introduction to mechanics, matter, and waves*—721

Wortman, Roger M. Photography of atomic lattices—464(A)

Yokasawa, Akihiko. Production and detection of high-energy particles—380(T)

Young, B. T. and J. B. Coon. Attempt to enhance singlet-triplet transitions in vapors—463(T)

Youngman, L. A. and Edward Snow. Student measurements of the velocity of light—463(T)

Youtz, Byron L. Section news: Oregon section—64

Zacharias, Jerrold R. Team approach to education—347

Zajac, Alfred, Henry Sudowaki, and Seymour Licht. Real fringes in the Sagnac and Michelson interferometers—669

Zemansky, Mark W. Review of *Handbook of thermophysical properties of solid materials, Vol. I, Elements*—795
 — Review of *Principles of optical crystallography*—337

Zucker, Charles. Measurements of a magnetic field—577

Analytic Subject Index to Volume 29

In this index are listed titles of articles and notes, together with the names of their authors. Classification is based upon analyses of contents of the articles, rather than upon the titles alone. The symbol (A) designates an abstract of a paper read at a meeting, (L) designates a Letter to the Editor. To facilitate reference to any desired subject, this index is divided into sections arranged alphabetically. The titles of these sections are as follows:

Accelerators
Acoustics (see Sound)
Aerophysics
American Association of Physics Teachers
Apparatus, demonstration
Apparatus, general
Apparatus, laboratory
Astrophysics
Biophysics
Books
Computers
Cosmic rays
Courses
Demonstrations
Department administration, maintenance, and activities
Editorials
Education, physics, and science
Electricity and magnetism
Electronics
Employment of physicists

Experiments
General physics, educational aspects
General physics, instructional techniques
Geophysics
Governmental and industrial research
Heat and thermodynamics
History and biography
Laboratories, construction and equipment
Laboratory arts and techniques
Laboratory organization and operation
Light
Mathematics
Mechanics, classical
Mechanics, quantum
Mechanics, statistical
Meteorology (see aerophysics)
Microwaves
Modern physics
Nuclear physics
Optics (see Light)
Particles, elementary

Philosophy of science
Plasma physics
Properties of matter
Reactors
Relativity
Reports, announcements, and news
Research and teaching
Rockets
Satellites
Secondary school physics
Social and economic aspect of science
Solid-state physics
Sound
Space physics
Teacher training
Testing, theory and techniques
Textbooks (see Books)
Units, dimensions, and terminology
Visual materials and methods
X rays

Aerophysics

Anatomy of thunder, W. J. Remillard—573(A)
Nature study in physics teaching, Raymond J. Seeger—674
An application of the hot wire anemometer in shock tube work, Jerry A. Nolen, Jr.—798(A)

AAPT

AAPT high school awards program—715
American Association of Physics Teachers, Table of organization for 1961—550
Annual business meeting, Frank Verbrugge—468
Citations for distinguished service, Leonard O. Olsen—476
College physics teaching improvement program, Robert I. Hulsizer—653(A)
Future meetings—23
High school awards program—59
Jerrold Reisch Zacharias: Oersted Medalist for 1960, Francis W. Sears—345
Minutes of the annual meeting of the council, Frank Verbrugge—466
New members of the association—65, 130, 216, 280, 382, 464, 564, 655, 723, 799, 869
On the recent past of physics, Gerald Holton—805
Proceedings of American Association of Physics Teachers. Revision of the constitution and by-laws, Ralph Winch—658
Proceedings of the American Association of Physics Teachers—Summer Meeting at Oberlin College, Ohio, June 23–25, 1960—Malcolm Correll—132
Proceedings of the Association: Thirtieth annual meeting, Malcolm Correll—565
Report of the editor for the year 1960, W. C. Michels—469
Report of the membership committee for 1960, C. L. Andrews—714
Report of the treasurer, Sanborn C. Brown—576
Section news: Central Pennsylvania section, John J. Heilmann—797
Section news: Chicago section, R. T. O'Connor—339
Section news: Chicago section, R. T. O'Connor—867
Section news: Colorado-Wyoming section, Clarence Rockwell—215
Section news: Colorado-Wyoming section, John V. Kline—380
Section news: Illinois section, Lyle W. Finley—380
Section news: Kentucky section, Richard Hanau—381
Section news: Kentucky section, Richard Hanau—653
Section news: Michigan section, Howard Jackson—655

Section news: Northern California section (spring 1960), George Barnes—278
Section news: Northern California section (fall 1960), George Barnes—279
Section news: Northern California section, (spring 1961) George Barnes—650
Section news: Oregon section, Byron L. Youtz—64
Section news: Oregon section, Vernon L. Long—652
Section news: Oregon section, Vernon L. Long—723
Section news: Southeastern section, Howard Carr—653
Section news: Texas section, H. K. Reynolds—462
Section news: Washington section, Donald D. Kerlee—379
Section news: Western Pennsylvania section, Richard W. Cole—463
Section news: Wisconsin section, Harry A. Auchter—868
Summer meeting at Stanford University, Stanford California, Frank Verbrugge—799
Team approach to education, Jerrold R. Zacharias—347
Your AAAPT in 1961, Malcolm Correll—70

Apparatus, demonstration

A mechanical analog of magnetic resonance, R. A. Fowler and H. S. Story—709
Apparatus drawings project. Acceleration carts and track, Robert G. Marcley—294
Apparatus drawings project. Versatile electric stop clock control system, Robert G. Marcley—498
An apparatus for studies of high voltage phenomena, Lane K. Branson—802(A)
Apparatus review: Demonstration thermometer, C. L. Overbeck—368
Apparatus review: Projection meter, O. L. Railsback—374
Apparatus review: Thermoelectric generator, William H. Michener—273
Apparatus review: Triode demonstrator unit, Richard H. Howe—640
Collision experiments in shadow projection, K. Hecht—636
Comment on "Demonstration of energy in an inelastic collision," J. M. Robinson—335
Demonstration of Doppler effect, Hans Weltin—713(L)
Dunking duck without liquid, Harry E. Stockman—335
Electric organ as a teaching aid in the general college physics course, T. G. Bullen—372
Fermi level demonstration, R. M. Warner—529

"Gravity" demonstration using a magnetic field, Edwin S. Dethlefsen—549(L)

Hearing and seeing beats, Olan E. Kruse—645(L)

Light pressure tube, H. V. Neher—666

A new kinetic energy demonstration, Gilbert H. Ward—709

A reversed loop-the-loop, Richard M. Sutton—48

Simple Schlieren demonstration, C. L. Mason—642

Variation of the homopolar motor, Thomas D. Strickler—635

Apparatus, general

Apparatus drawings project. Ionization chamber, Robert G. Marcley—845

Apparatus drawings project. Large electromagnet constructed for use at the California Institute of Technology, Robert G. Marcley—90

Apparatus review: Stroboscopic camera and accessories, Jacob P. Dewitt—332

A constantly available soap film, Julius Sumner Miller—713(L)

Conversion of a commercial spectrograph for photoelectric scanning, A. R. Tynes and C. J. Filz—65(A)

A diffusion cloud chamber with a vacuum jacket, Anthony A. Silvasti and Donald Marn—99

Inexpensive, compact, and versatile source of ultraviolet and visible mercury lines, Haym Kruglak and Stanley K. Derby—371

Report on the 1960 summer workshop on new physics apparatus at Rensselaer Polytechnic Institute, Harald C. Jensen—340(A)

A student magnifying manometer, R. W. Christy and W. P. Davis, Jr.—128

Surplus property guide—23

Suspension for Foucault pendulum, Willard A. Brown—646(L)

The use of standard panels for optical devices in the school laboratory, Clarence R. Smith—340(A)

Apparatus, laboratory

The absolute viscosity of water, Laurence C. Cerny—708

Alternating current spark generator for the elementary physics laboratory, K. W. Billman, J. D. Hayden, Jr., R. C. Levine, and D. A. Luce—367

Apparatus drawings project. Apparatus for electron paramagnetic resonance at low fields, Robert G. Marcley—492

Apparatus drawings project. Apparatus for measuring the Rutherford scattering of alpha particles by thin metal foils, Robert F. Marcley—349

Apparatus drawings project. Classen's method e/m of electrons apparatus, Robert G. Marcley—26

Apparatus drawings project. Hall effect magnet, Robert G. Marcley—29

Apparatus drawings project. Large electromagnet constructed for use at the California Institute of Technology, Robert G. Marcley—90

Apparatus drawings project. Nuclear magnetic resonance absorption apparatus, Robert G. Marcley—451

Apparatus drawings project—Omegatron for undergraduate laboratory determination of the ratio e/m of the proton, Robert G. Marcley—86

Apparatus drawings project. Small x-ray tube developed for the undergraduate physics laboratories of the University of Washington, Robert G. Marcley—445

Apparatus review: The Finescale magnifying comparator, Walter R. French, Jr.—273

Apparatus review Hydrogen lamp, Joseph W. Straley—856

Boyle's law experiment for general physics laboratory, George C. Towe and Georgeanne R. Caughlan—706

Busch tube for determining e/m for the electron, H. V. Neher—471

Centripetal force apparatus, John H. Walters—212(L)

A characteristics tracer, P. G. Guest—287

A charged particle spectrometer for an undergraduate laboratory, B. Hogg, D. Kerr, and L. Reed—57

Circular motion, Albert B. Stewart—373

Comments on centripetal force experiment, A. H. Benade—712(L)

Decade scaler for college laboratory use, Larry V. East and Paul A. Roys—307

Determination of the angular speed of the Leybold rotating mirror, Howard N. Maxwell—711

Emanation electroscope, Wallace A. Hilton—789

An instrument for the measurement of the heat of vaporization of water, H. Lindeman and A. Lavie—705

Laboratory problem in projectile motion, Allen King—547

Measurement of molecular diameters and average velocities, Robert E. Warner—736

Measurements of a magnetic field, Charles Zucker—577

Momentum experiment for the laboratory, Arthur G. Rouse—635

A note on the Welch scattering apparatus, D. J. Prowse—854

An optical bench light source, Alfred M. Eich, Jr. 787

Photoelectric effect experiment, Sumner P. Davis—706

Rotating coil magnetometer for the measurement of the earth's magnetic field, D. S. Ainslie—333

A student magnifying manometer, R. W. Christy and W. P. Davis, Jr.—128

Synchronous clock versus radio beep, D. R. Muss—463(A)

Thermocouple with unidirectional characteristics, Elliot MacCracken—65(A)

The time interval in the Clement and Desormes experiment, R. H. Margarvey, Roy L. Bishop and B. L. Blackford—274

Transistor alpha-particle detector, C. S. Ananiades and J. W. Dewdney—329

Uniform acceleration apparatus, Alfred Romer—211

Astrophysics

Astromonical unit as average earth-sun distance, Arthur L. Berman—572(A)

Deuteronomy: Synthesis of deuterons and the light nuclei during the early history of the solar system, William A. Fowler, Jesse I. Greenstein and Fred Hoyle—393

Emission of radio-frequency waves from plasmas, G. Beketi and Sanborn C. Brown—404

The mystery of beta persel, E. G. Ebbighausen—64(A)

Radio astronomy, Marius Laffineur—198

Biophysics

Effects of ultrasonics on the germination and development of seeds, Carl V. Bertsch—579(A)

Physics for the biologist, Otto Blüh—771

Uptake of radioisotopes, J. R. Ogren—651(A)

Books

Book review: *X-Ray microscopy and x-ray microanalysis* edited by A. Engström, V. E. Cosslett, H. H. Pattee; Paul Kirkpatrick—793

Book review: *The amateur scientist* by C. L. Stong; Malcolm K. Smith—377

Book review: *Atomic and nuclear physics* by R. S. Shankland; Ward Whaling—213

Book review: *Basic electrical measurements* by M. B. Stout; Francis T. Worrell—376

Book review: *The book of the atom* by Leonard de Vries; Judson Cross—650

Book review: *Careers in physics* by Alpheus W. Smith and Winston L. Hole; Paul Kirkpatrick—60

Book review: *College physics, 3rd edition* by Francis W. Sears and Mark W. Zemansky; Richard A. Kane—62

Book review: *Crystals and crystal growing* by Alan Holden and Phyllis Singer; A. L. Patterson—127

Book review: *Discourse on bodies in water* by Galileo Galilei; Alfred Romer—558

Book review: *Electricity and magnetism* by Henry E. Duckworth; Allen L. King—62

Book review: *Electrodynamics of continuous media* by L. D. Landau and E. M. Lifshitz; Allen L. King—647

Book review: *Electromagnetic energy transmission and radiation* by Richard B. Adler, Lan Jen Chu and Robert M. Fano; Giovanni Lanza—214

Book review: *Electromagnetic fields, energy, and forces*, by R. M. Fano, L. J. Chu, and R. B. Adler; James A. Dreesen—562

Book review: *Elementary matrices and some applications to dynamics and differential equations* by R. A. Frazer, W. J. Duncan, and A. R. Collar; A. A. Mullin—555

Book review: *An elementary treatise on curve tracing* by Percival Frost; P. Le Corbeiller—649

Book review: *Elements of physics* by George Shortley and Dudley Williams; Irving E. Dayton and M. A. Heald—719

Book review: *Field theory for engineers* by Parry Moon and Domina Eberle Spencer; A. A. Mullin—717

Book review: *Fluid dynamics* by D. E. Rutherford; Raymond J. Seeger—129

Book review: *Fortschritte der Hochfrequenztechnik, Vol. 4* edited by J. Zenneck, M. Strutt, and F. Vilbig; Ernst K. Franke—864

Book review: *Foundations of electromagnetic theory* by John R. Reitz and Frederick J. Milford; W. M. Schwartz—337

Book review: *From atoms to stars* by Theodore H. Ashford; Thornton Page—61

Book review: *From nucleus to universe* by S. T. Butler and H. Messel; Leon Blitzer—647

Book review: *Fundamental physics* by Jay Orear; F. W. Van Naele, Jr.—460

Book review: *Handbook of thermophysical properties of solid materials, Vol. I* edited by Alexander Goldsmith, Thomas E. Waterman, Harry Hirschhorn; Mark W. Zemansky—795

Book review: *Heat and thermodynamics* by J. K. Roberts and A. R. Miller; Raymond B. Sawyer—560

Book review: *A history of science, technology, and philosophy in the 18th century* by A. Wolf; Charles Williamson—795

Book review: *Information retrieval and machine translation, in two parts, Part I*, edited by Allen Kent; A. A. Mullin—376

Book review: *Initiation à la mécanique quantique*; David B. Beard—461

Book review: *International education in physics*; Arnold Arons—462

Book review: *Introduction to atomic and nuclear physics* by Otto Oldenberg; Albert A. Bartlett—792

Book review: *Introduction to celestial mechanics* by Theodore E. Sterne; Heinrich K. Eichhorn—563

Book review: *Introduction to mechanics, matter, and waves* by Karl Uno Ingard and William L. Kraushaar; Francis T. Worrell—721

Book review: *Introduction to solids* by Leonid V. Azároff; Roald K. Wangness—647

Book review: *An introduction to the theory of vibrating systems* by W. G. Bickley and A. Talbot; Raymond Seeger—866

Book review: *Kinetic theory of gases*, by R. D. Present; R. T. Cox—649

Book review: *Lectures in theoretical physics, Volume I*, edited by Wesley E. Brittin and Lita G. Dunham; William T. Payne—129

Book review: *Mechanics, second edition*, by Keith R. Symon; James B. Raz—720

Book review: *Introduction to the statistical dynamics of automatic control systems* by V. V. Solodovnikov; A. A. Mullin—555

Book review: *Introduction to the theory of ionized gases* by J. L. Delcroix; Noah Sherman—648

Book review: *Mechanics and properties of matter 2nd edition* by Reginald J. Stephenson; Myron S. McCay—213

Book review: *Modern physics buildings—design and function* by R. Ronald Palmer and William Maxwell Rice; G. M. Almy—860

Book review: *Modern university physics* by James E. Richards, Francis Weston Sears, M. Russell Wehr, and Mark W. Zemansky; Alfred Romer and Donald C. Peckham—722

Book review: *Non-relativistic quantum mechanics* by R. M. Silbrito; George L. Trigg—375

Book review: *Nuclear spectroscopy* edited by Fay Ajzenberg-Selove; Peter Axel—561

Book review: *On motion and on mechanics* by Galileo Galilei; G. C. McVittie—336

Book review: *Open vistas* by Henry Margenau; P. W. Bridgman—556

Book review: *Optics and optical instruments* by B. K. Johnson; Charles Williamson—555

Book review: *Philosophy of science* edited by Arthur Danto and Sidney Morganbesser; Michael Scriven—556

Book review: *Physics: foundations and frontiers* by George Gamow and John M. Cleveland; Ira M. Freeman—60

Book review: *Physics of the solar chromosphere* by Richard N. Thomas and R. Grant Athay; F. R. Scott—791

Book review: *Physics, the pioneer science* by Lloyd W. Taylor; Melba Phillips—561

Book review: *Physics* by Physical Science Study Committee; Thomas D. Miner—338

Book review: *Planning for excellence in high school science*, National Science Teachers Association; Charles Williamson—795

Book review: *Plasma acceleration* edited by Sidney W. Kash; F. Robert Scott—336

Book review: Post-use review of *Physics for students of science and engineering* by David Resnick and David Halliday; Robert Weinstock—717

Book review: *Principles of electricity and magnetism* by E. M. Pugh and E. W. Pugh; Charles Williamson—213

Book review: *Principles of fluid mechanics* by Richard A. Kenyon; Raymond Seeger—861

Book review: *The principles of nuclear magnetism* by A. Abragam; L. C. Hebel—860

Book review: *Principles of optical crystallography* by A. V. Shubnikov; Mark W. Zemansky—337

Book review: *Quality science for secondary schools*, National Science Teachers Association; Judson B. Cross—861

Book review: *Relativistic electron theory* by M. E. Rose; W. H. Furry—866

Book review: *Rival theories of cosmology* by H. Bondi, W. B. Bonnor, R. A. Lyttleton, and C. J. Whitrow; G. C. McVittie—554

Book review: *Rotation of the earth, a geophysical discussion* by W. H. Munk and C. J. F. MacDonald; Arnold Arons—559

Book review: *Science in general education* by Robert Ray Haun; William S. Burton—557

Book review: *Science in space* by L. V. Berkner and Hugh Odishaw; H. V. Neher—791

Book review: *Science since Babylon* by Derek J. de Solla Price; Thornton Page—863

Book review: *A short history of technology* by T. K. Derry and Trevor L. Williams; Charles Williamson—649

Book review: *Space and the atom* edited by S. T. Butler and H. Messel; Robert L. Weber—862

Book review: *Statistical theory of communication* by Y. W. Lee; Edwin T. Jaynes—276

Book review: *Structure and change, an introduction to the science of matter* by G. S. Christiansen and Paul H. Garrett; Frank McGar, Jr.—128

Book review: *Structure of science (Problems in the logic of scientific explanation)* by Ernest Nagel; David Hawkins—716

Book review: *Symposium on active networks and feedback systems* edited by Jerome Fox; A. A. Mullin—717

Book review: *A textbook on light* by L. Mackinnon; Thornton Page—648

Book review: *The theory of neutral and ionized gases*, edited by C. De Witt and J. F. Detoeuf; F. R. Scott—378

Book review: *Toward modern science, Volumes I and II*, edited by Robert M. Palter; Raymond J. Seeger—867

Book review: *Transistor logic circuits* by Richard B. Hurley; A. A. Mullin—794

Book review: *Transmission of information* by Robert Fano; David Hawkins—793

Book review: *Turning points in physics* by R. J. Blin-Stoyle; D. Ter Haar; K. Mendelsohn; G. Temple; F. Waismann; D. H. Wilkinson; Allen L. King—794

Book review: *Units, dimensions and dimensionless numbers* by D. C. Ipsen; *How to solve physics problems* by Edwin M. Ripin; *Dimensions, units, and numbers* by Renee G. Ford and Ralph E. Cullman; R. M. Helms—796

Computers
Using a small analog computer as a classroom aid, Donald L. Shirer—136(A)

Cosmic Rays
High-energy cosmic-ray experiments at balloon elevations, Don Cottrell—379(A)
The history of cosmic rays, W. F. G. Swann—811
Some geophysical aspects of cosmic rays, Arne Eld Sandström—187

Courses

A cooperative venture in the philosophy of science, Edward P. Clancy—95
 Physics for the biologist, Otto Blüh—771

Demonstrations

Demonstration of Brownian motion and other difficult phenomena on closed circuit television, Joseph A. Carr—571(A)
 Demonstration of the electromagnetic definition of **B**, Mario Iona—708
 Demonstration of diffusion, Eldred F. Tubbs—802(A)
 A model Foucault pendulum, Francis W. Sears—136(A)
 More visual aids in the physics lecture, Walter Eppenstein—134(A)
 A paradox, Hans Weltin—711
 A phase demonstrator for waves, Joseph H. Howey—135(A)
 Production of discharges in gases by static electricity, D. S. Ainslie—857(L)
 Projection cloud chamber for classroom demonstration, Robert G. Picard and Henry E. Mazurek—572(A)

Department administration, maintenance, and activities

The AAPT buildings project, R. Ronald Palmer—868(A)
 The addition to the physics building at the University of Texas, Robert B. Watson—50
 The Pierre S. du Pont science building, Irving E. Dayton—753
 Small colleges and physics research, J. Howard McMillen—272
 Some aspects of research in undergraduate college physics departments, Walter H. Kruschwitz—654(A)
 Surplus property guide—23

Editorials

"It is more blessed . . ." Charles H. Schauer—633
 Small colleges and physics research, J. Howard McMillen—272
 A vicious circle, Walter C. Michels—851
 Your AAPT in 1961, Malcolm Correll—70

Education, physics, and science

Book review: *Science since Babylon* by Derek J. de Solla Price, Thornton Page—863
 Can four year colleges prepare physics majors for graduate work in physics? George E. Pake—678
 Cognitive development in children and readiness for high school physics, Celia B. Stendler—832
 A comment on "On teaching the philosophy of physics," Edgar A. Pearlstein—127(L)
 A critical view of science fairs, Eric T. B. Gross—868(A)
 An experiment in partial advanced placement, H. J. Johnson—867(A)
 Institutes in research techniques, Leonard Muldawer—276(L)
 On the education of physicists in Austria and Israel, Albert M. Goldfarb—161
 Physics at the University of Palermo, Harry Kinerk—379(T)
 Physics education in Poland, Arkadiusz Piekara—764
 Physics in technology at lower Columbia College, Oliver K. Schaefer—379(A)
 Plans for a collaborative effort to improve college physics, E. L. Goldwasser—380(T)
 Proposal for joint seminars for colleges, Verne E. Dietrich—868(A)
 Report on the physics section of the science conference of Tennessee state colleges and universities, Sara Wood—653(A)
 Team approach to education, Jerrold R. Zacharias—347
 The education of physicists in Sweden, K. G. Friskopp and Arne Eld Sandström—168
 Education of a scientist in France, B. Vodar—64(A)
 Further comment on the teaching of the philosophy of physics, Raymond J. Seeger—127(L)
 Hints for visiting scientists teaching in secondary schools, Malcolm Katz—57
 International conference on physics education, Francis W. Sears—151
 Research and its sponsorship in undergraduate college physics, Walter H. Kruschwitz—134(A)
 Research programs in non-Ph.D. granting institutions, J. Howard McMillen—108
 The role of physics in the 'Great Books' program at St. John's College, Thomas K. Simpson—135(A)
 Training of physicists for the master's degree, Martin J. Arvin—125
 The undergraduate curriculums for physics majors in a select sample of institutions, C. B. Clark—219
 A vicious circle, Walter C. Michels—851

Electricity and magnetism

Apparatus drawings project. Large electromagnet constructed for use at the California Institute of Technology, Robert G. Marclay—90
 Axiomatic development of the laws of vacuum electrodynamics, R. H. Lehmburg—584
 Basic measurements of small magnetic flux, D. M. Nemirow—651(A)
 Book review: *Fortschritte der Hochfrequenztechnik*, Vol. 4 edited by J. Zenneck, M. Strutt, and F. Vilbig; Ernst K. Franke—864
 Classical approach to Mott scattering, Larry V. East and Paul A. Roys—548
 Concerning the naming of the "practical" electrical units, E. Scott Bart—532
 Conservative fields in dc networks, Emerson M. Pugh—484
 Consistent use of hand rules, Herbert D. Schwetman—367
 Correspondence principle approach to radiation theory, F. E. Low—298
 Definition of macroscopic electrostatic field, Allan N. Kaufman—626
 Definitions of resonance and exact conditions for resonance in some electrical circuits. 1. Definitions of resonance for series and parallel LCR circuits, Edward J. Burge—19
 Definitions of resonance and exact conditions for resonance in some electrical circuits. 2. Tuned coupled circuits, Edward J. Burge—251
 Demonstration of the electromagnetic definition of **B**, Mario Iona—708
 Demonstration of the electromagnetic definition of **B**, Mario Iona—380(T)
 Derivation of the displacement current from the Biot-Savart Law, Arthur Bierman—355
 Displacement current in conductors, J. I. Swigart—804(A)
 Efficiency of thermoelectric devices, Eric T. Gross—729
 Emission of radio-frequency waves from plasmas, G. Befekhi and Sanborn C. Brown—404
 Erratum: Vacuum electrodynamics on a merry-go-round, Jack L. Uretsky and John Ise—328
 Expansion of the point charge rock salt lattice potential in kubic harmonics, C. S. Riley and E. F. Sieckmann—381(A)
 Experiment for premedical students using the student potentiometer, Howard N. Maxwell—642
 Fluorescent lamp. A teaching device, Isidor Auerbach—546
 Magnetostatic fields at an iron-air boundary, J. Van Bladel—732
 Measurements of a magnetic field, Charles Zucker—577
 More hand rules, Patrick O. Braden—855
 A note on the frequency of ferromagnetic resonance, C. R. Buffler, M. W. Muller and R. H. Kantor—786
 A note on the introduction of the magnetic pole in the mks system, Henry S. C. Chen—134(A)
 Optical observation of ferrimagnetic domains, Myron Jeppesen and William A. Sloan—789
 Parallel resonance in "low-Q" circuits, Robert C. Waddell—380(T)
 Paramagnetism: A key to the knowledge of chemical bonding, Juan A. McMillan—207
 Production of discharge in gas at low pressures by static electricity, D. S. Ainslie—574(A)
 Production of discharges in gases by static electricity, D. S. Ainslie—857(L)
 Rapid determination of the constants of a galvanometer, Jean-Pierre Jan—373
 Relativity and parallel wires, David L. Webster—841
 Rolling ball analog for diode tubes at microwave frequencies, C. L. Andrews—134(A)

Rotating coil magnetometer for the measurement of the earth's magnetic field, D. S. Ainslie—333
 The screening effect of a circular disk, T. S. E. Thomas—37
 Secret of the dunking duck, Harry E. Stockman—374(L)
 A simple electric motor to demonstrate basic principles, Delwyn M. Barney—279(A)
 Some applications of Schwinger's principle, Ll. G. Chambers—836
 Thermocouple with unidirectional characteristics, Elliot MacCracken—65(A)
 The relativity of moving circuits and magnets, David L. Webster—262
 Variation of the homopolar motor, Thomas D. Strickler—635
 Velocity of wave propagation experiment, Thomas D. Rossing—123
 Wave propagation in a moving plasma, Frederick L. Scarf—101

Electronics

Apparatus review: Triode demonstrator unit, Richard H. Howe—640
 Basic semiconductor experiments, Raymond A. Daly and Bert J. Hill—571(A)
 A characteristics tracer, P. G. Guest—287
 Circuits of the future—what can we teach now about microsystem electronics, W. W. Happ—652(T)
 Decade scaler for college laboratory use, Larry V. East and Paul A. Roys—307
 Dunking duck without liquid, Harry E. Stockman—335(L)
 Dynatron oscillator for Lissajous figures, S. W. Leifson—278(A)
 Elementary junction transistor amplifiers, W. T. Ogier—802(A)
 Experimental verification of the gain formula for parametric amplifiers, J. K. Buckley and J. J. Hupert—310
 Experiments on electronics, Karl Hecht—575(A)
 An outline of an electronics course for physics students, Alan B. Grossberg—868(A)
 Photography of atomic lattices, Roger M. Wortman—464(A)
 Rolling ball analog for diode tubes at microwave frequencies, C. L. Andrews—134(A)
 Secret of the dunking duck, Harry E. Stockman—374(L)
 Using a small analog computer as a classroom aid—136(A)

Employment of physicists

Physics and physicists in industry, C. J. Overbeck—340(A)
 Research programs in non-Ph.D. granting institutions, J. Howard McMillen—108
 Selling physics, Roger M. Morrow—380(T)
 Undergraduate college physics research and its sponsorship, Walter H. Kruschwitz—83

Experiments

Bringing Kepler into the laboratory, Richard M. Sutton—803(A)
 Experimental verification of the gain formula for parametric amplifiers, J. K. Buckley and J. J. Hupert—310
 Experiment for premedical students using the student potentiometer, Howard N. Maxwell—642
 Experiments on the angular momentum of a supercurrent and the possibility of a supercurrent gyroscope, A. C. Rose-Innes and G. M. Taylor—268
 Fluorescent lamp. A teaching device, Isidor Auerbach—546
 Functional dependence: Three introductory experiments, Alfred Romer—630
 Laboratory determination of velocities by means of a primary standard, Pascal M. Rapier—279(A)
 Motivating experiments in mechanics, David D. Norris—803(A)
 On characteristics of materials and the Millikan oil-drop experiment, W. D. Foland—787
 New laboratory friction experiment using model automobiles, Franklin S. Harris, Jr. and Claude J. Hooper—804(A)
 Optical observation of ferrimagnetic domains, Myron Jeppesen and William A. Sloan—789
 Physical pendulum experiment for sophomores, John V. Kline—134(A)
 Physical pendulum experiment for sophomores, John V. Kline—380(T)

Pulsed neutron experiments in the student laboratory, Lawrence Ruby—801(A)
 Student experiment on the attenuation of gamma radiation, H. W. Taylor and G. N. Whyte—315
 Students method for determining the binding energy of deuteron, Eddie Ortiz—684
 The time interval in the Clement and Desormes experiment, R. H. Magarvey, Roy L. Bishop and B. L. Blackford—274
 Velocity of wave propagation experiment, Thomas D. Rossing—123

General physics, educational aspects

College physics teaching improvement program, Robert I. Hulsizer—653(A)
 Distribution of time in general physics courses, Marsh W. White—291
 Does industry prefer the B.S. degree to the B.A. degree? Phillip W. Alley—798(A)
 Nature study in physics teaching, Raymond J. Seeger—674
 The 1960 visiting foreign staff project (V.F.S.P.) at Temple University, Elmer L. Offenbacher—137
 Performance in college physics of students with PSSC background, Frank Verbrugge—570(A)
 Physics and physicists in industry, C. J. Overbeck—340(A)
 Physics in the universities of Colombia, W. L. Furman—654(A)
 Physics summer institute in Pakistan, Eric M. Rogers—661
 Plans for a collaborative effort to improve college physics, E. L. Goldwasser—380(T)
 Preschool physics, Frieda Stahl—579
 Presentation of Newtonian mechanics, N. Austern—617
 Proper role of optics in the general physics curriculum, Stanley S. Ballard—654(A)
 Report on the film program at Rensselaer Polytechnic Institute, Harry F. Meiners, Alan S. Meltzer, Charles C. Werberig, and Guy Huse—803(A)
 The role of physics in the 'Great Books' program at St. John's College, Thomas K. Simpson—135(A)
 Teaching of physics in Argentina, B. A. Sordelli—574(A)
 The undergraduate curriculums for physics majors in a select sample of institutions, C. B. Clark—219
 Updateness in the classroom, Fred Warburton—570(A)

General physics, instructional techniques

Concurrent use of Sears/Zemansky college and university physics texts, John A. Day—712(L)
 Distribution of time in general physics courses, Marsh W. White—134(A)
 Evaluation of the relative merits of lecture and recitation periods in the teaching of college physics, Otis Lancaster, Kenneth Manning, and Marsh White—574(A)
 Is modern physics "science for nonscience majors"? James J. Rudick—571(A)
 Is a textbook picture equivalent to a demonstration? Lawrence N. Hadley—380(A)
 Laboratory determination of velocities by means of a primary standard, Pascal M. Rapier—279(A)
 On making lecture-recitation-laboratory work, Joseph W. Straley—654(A)
 Midwinter term at Florida Presbyterian College, J. G. Foster—654(A)
 Objective-type tests for short daily quizzes, Marsh W. White—463(A)
 Physics of spheres as basic physics: how use it? Lester Clark Lewis—570(A)
 Scales and how to read them, Paul Kirkpatrick—571(A)

Geophysics

Changes in crustal temperature due to sedimentation, Frank Hadell—380(T)
 Introduction to geomagnetism: the equatorial electro-jet, Mateo Casavérde—744
 Some geophysical aspects of cosmic rays, Arne Eld Sandström—187

Governmental and industrial research

Physics in mining research, John S. Rinehart—381(A)
 Report on the Boeing scientific research laboratories, Emmett B. Moore, Jr.—379(A)
 Research activities at Research Corporation, Harry J. White—653(A)

Heat and thermodynamics

Carnot efficiency as parameter in thermoelectric conversion, Eric T. B. Gross—867(A)
 Comments on Buchdahl's treatment of thermodynamics, Louis A. Turner—40
 Condition that temperature defined by an equation of state be equal to absolute thermodynamic temperature, Austin J. O'Leary—852
 The definition of the perfect gas, P. T. Landsberg—695
 Efficiency of thermoelectric devices, Eric T. Gross—729
 Elementary satellite thermal problems, G. D. Gordon—574(A)
 Free expansion of an ideal gas, Robert W. Estin—340(A)
 An instrument for the measurement of the heat of vaporization of water, H. Lindeman and A. Lavie—705
 On intersecting isentropes, J. Kestin—329
 On the Kelvin and perfect gas temperatures, Dillon E. Mapother—858(L)
 An operational definition of the second law of thermodynamics, John S. Thomsen—300
 Optical analogs for heat conduction in solids, Frederick E. Alzofon—572(A)
 Paradox of the reciprocal Carnot relationship, Neal Moore and Robert Goldman—645(L)
 A pulse method of measuring the thermal diffusivity of metals, Raymond B. Sawyer—797(A)
 A simple argument for the temperature dependence of transport coefficients in imperfect gases, J. D. Harris and R. W. Christy—136(A)
 Statement of the first law of thermodynamics, Robert E. Warner—124
 Statement of the laws of thermodynamics, D. K. C. MacDonald—126(L)
 The time interval in the Clement and Desormes experiment, R. H. Magarvey, Roy L. Bishop and B. L. Blackford—274
 Thermodynamics, statistics, and information, L. Brillouin—318
 A useful thermodynamic diagram, Hilbert Schenck, Jr.—703
 The zeroth law of thermodynamics, L. A. Turner—71

History and biography

Anniversaries in 1961 of interest to physicists, E. Scott Barr—234
 Book review: *Science since Babylon* by Derek J. de Solla Price; Thornton Page—863
 Book review: *Toward modern science, Volume I and II*, ed. Robert M. Palmer; Raymond J. Seeger—867
 Concerning the naming of some mechanics units, E. Scott Barr—655(A)
 Concerning the naming of the "practical" electrical units, E. Scott Barr—532
 Development of the kinetic theory of gases V. The equation of state, Stephen Brush—593
 Early work in electron diffraction, Sir George Thomson—821
 Early work on the positron and muon, C. D. Anderson—825
 European organization for nuclear research CERN, R. H. Mussbaum—64(A)
 Has physics teaching kept up with physics? William H. Michener—463(A)
 The history of cosmic rays, W. F. G. Swann—811
 Men and events of science commemorated on postage stamps, Julius Sumner Miller—571(A)
 On the recent past of physics, Gerald Holton—805
 The scattering of x rays as particles, Arthur H. Compton—817

Laboratories, construction and equipment

Acoustical problems of physics lecture halls, R. S. Shankland—136(A)
 The addition to the physics building at the University of Texas, Robert B. Watson—50

Book review: *Modern physics buildings—design and function* by R. Ronald Palmer and William Maxwell Rice; G. M. Almy—860
 The Pierre S. du Pont science building, Irving E. Dayton—753

Laboratory arts and techniques

A "Cape Canaveral Type" activity during a laboratory period, Bowman C. Collins—279(A)
 Experiments on electronics, Karl Hecht—575(A)
 Hall effect in the general physics laboratory, Walter Eppenstein and Richard M. Heavers—574(A)
 Laboratory measurement of the mass and diameter of a copper atom, Carl C. Sartain—572(A)
 The lengthening pendulum, Thomas T. Cook and Robert Mueller—868(A)
 Measurement of molecular constants in the elementary laboratory, Robert E. Warner—573(A)
 Scales and how to read them, Paul Kirkpatrick—571(A)
 Sophomore laboratory error analysis, Donald L. Shirer—459(L)

Laboratory organization and operation

Advanced undergraduate physics laboratory, Frank G. Karloris—868(A)
 Problems of laboratory operation and the exploding population, Norman Barton—379(A)
 A small perturbation on the degenerate state of general physics, C. R. Burnett—135(A)

Light

Apparatus review: Hydrogen lamp, Joseph W. Straley—856
 Construction and use of a Fabry-Perot interferometer, Wallace A. Hilton—572(A)
 A contrast-field polaroid polarizer, Louis E. Smith, Jr.—802(A)
 Conversion of a commercial spectrograph for photoelectric scanning, A. R. Tynes and C. J. Filz—65(A)
 Design of microwave zone plates, Thomas B. Brown—569(A)
 Determination of the angular speed of the Leybold rotating mirror, Howard N. Maxwell—711
 Double refraction in calcite, David B. Nicodemus—802(A)
 Emission and absorption by afterglowing nitrogen and oxygen in the extreme ultraviolet, Clifford E. Fairchild—379(A)
 Foucault method of determining the velocity of light in the optics laboratory, Suzanne Broughton—797(A)
 Inexpensive, compact, and versatile source of ultraviolet and visible mercury lines, Haym Kruglak and Stanley K. Derby—371
 Light-optical analogs or x-ray diffraction patterns, Jurgen R. Meyer-Arendt and John K. Wood—341
 Light pressure tube, H. V. Neher—666
 Method of light loss in photomultiplier tubes, Dale Pillsbury—651(A)
 An optical analog to the motion of magnetically trapped particles, David Stern—767
 An optical bench light source, Alfred M. Eich, Jr.—787
 Primary aberrations of mirrors, Aaron S. Filler—687
 Proper role of optics in the general physics curriculum, Stanley S. Ballard—654(A)
 Quantum theory of interference effects in the mixing of light from phase-independent sources, U. Fano—539
 Real fringes in the Sagnac and Michelson interferometers, Alfred Zajac, Henry Sadowski, and Seymour Licht—669
 Some observations on crossed meshes, L. R. Plumb—651(A)
 The use of standard panels for optical devices in the school laboratory, Clarence R. Smith—340(A)

Mathematics

An experiment in probability, C. J. Aitchison—855
 Geometrical approach to the theory of probability, Dan McLachlan, Jr., and L. I. Chamberlain—385
 Graphic methods for obtaining centroids, with applications to mathematical and statistical analysis, S. I. Askovitz, M.D.—571(A)
 On the tight packing of spheres and associated problems in flat N-dimensional space, Edward F. Fahy—725
 Representation of the commutation relation, Peter Fong—852

Sophomore laboratory error analysis, Donald L. Shirer—459(L)
 An unusual method for solving the harmonic-oscillator equation, Robert Weinstock—803(A)
 An unusual method of solving the harmonic-oscillator equation, Robert Weinstock—830
 Using a small analog computer as a classroom aid—136(A)

Mechanics, classical

The absolute viscosity of water, Laurence C. Cerny—708
 Aerodynamics of the spinning baseball, Paul Kirkpatrick—573(A)
 Alternating current spark generator for the elementary physics laboratory, K. W. Billman, J. D. Hayden, Jr., R. C. Levine, and D. A. Luce—367
 Another hydrostatic paradox, R. W. Pohl and R. O. Pohl—369
 Apparatus drawings project. Acceleration carts and track, Robert G. Marcley—294
 Book review: *An introduction to the theory of vibrating systems* by W. G. Bickley and A. Talbot; Raymond Seeger—866
 Boyle's law experiment for general physics laboratory, George C. Towe and Georgeanne R. Caughlan—706
 Bringing Kepler into the laboratory, Richard M. Sutton—803(A)
 Centrifugal force, John V. Kline—802(A)
 Centripetal force apparatus, John H. Walters—212(L)
 Circular motion, Albert B. Stewart—373
 Classical approach to Mott scattering, Larry V. East and Paul A. Roys—548
 Collision experiments in shadow projection, K. Hecht—636
 Comment on "Demonstration of energy in an inelastic collision," J. M. Robinson—335(L)
 Comments on centripetal force experiment, A. H. Benade—712(L)
 Concerning the naming of some mechanics units, E. Scott Barr—655(A)
 Conformal coordinates associated with uniformly accelerated motion, Robert T. Jones—124
 The conical pendulum again, A. G. Samuelson—790(L)
 Convenient equations for projectile motion, J. Gibson Winans—623
 The domino rule—a way of handling relative velocities, John W. Dewdney—249
 Elementary analysis of the gyroscope, James Whitteker—550(L)
 Example and demonstration of velocity-dependent potential in classical mechanics, John B. Dicks—654(A)
 Experimental physics, James H. Ross—279(A)
 Flying umbrella, Walter Roy Mellen—459
 Graphic methods for obtaining centroids, with applications to mathematical and statistical analysis, S. I. Askovitz, M.D.—571(A)
 "Gravity" demonstration using a magnetic field, Edwin S. Dethlefsen—549(L)
 Hamilton's principle and varied paths, Charles N. Hamtil—573(A)
 Innovation and modification of Lami's theorem, Michael Svonavec—340(A)
 An isochronous pendulum, George Barnes—136(A)
 Laboratory problem in projectile motion, Allen King—547
 The laws of classical motion: what's *F*? what's *m*? what's *a*?, Robert Weinstock—698
 The lengthening pendulum, Thomas T. Cook and Robert Mueller—868(A)
 A mechanical analog of magnetic resonance, R. A. Fowler and H. S. Story—709
 A model Foucault pendulum, Francis W. Sears—136(A)
 Motivating experiments in mechanics, David D. Norris—803(A)
 A new kinetic energy demonstration, Gilbert H. Ward—709
 A new kinetic energy demonstration, Gilbert Ward—798(A)
 New laboratory friction experiment using model automobiles, Franklin S. Harris, Jr. and Claude J. Hooper—804(A)
 A new theorem for moment of inertia, Surendra N. Srivastava—211
 An optical analog to the motion of magnetically trapped particles, David Stern—767
 A paradox, Hans Weltin—711
 Physical pendulum experiment for sophomores, John V. Kline—134(A)
 Presentation of Newtonian mechanics, N. Austern—617
 Relativistic oscillator with natural forcing functions, I. U. Ojalvo—508

A reversed loop-the-loop, Richard M. Sutton—48
 Roberval balance, S. W. Leifson—652(T)
 The significance of the Mach principle, P. W. Bridgman—32
 A simple mechanical analogy for isothermal compression of liquids and solids, Blake D. Mills, Jr.—741
 Simple method for determining Poisson's ratio dynamically, John S. Rinehard and William C. McClain—215(A)
 The stop-light dilemma, Howard S. Seifert—803(A)
 Tension in string supporting a whirling stone, Leon Blitzer—334(L)
 Tension in string supporting a whirling stone, A. G. Samuelson—58(L)
 Uniform acceleration apparatus, Alfred Romer—211
 An unusual method of solving the harmonic-oscillator equation, Robert Weinstock—830
 What's *F*? What's *m*? What's *a*?, Robert Weinstock—569(A)

Mechanics, quantum

Correspondence principle approach to radiation theory, F. E. Low—298
 A derivation of the Fermi-Thomas equation, Arthur A. Broyles—81
 Elementary derivation of the electron-electron interaction via the phonon field, Robert Nyden Hill—739
 Evolution of matrix mechanics, Aaron Sayvetz—575(A)
 Intrinsic magnetic moment as a nonrelativistic phenomenon, A. Galindo and C. Sanchez del Rio—582
 The limit of a one-dimensional square well, James G. Brennan—45
 Note on gauge transformations in quantum mechanics, A. O. Barut and M. Leiser—24
 Parity, Graham McCauley—173
 Phase-shift method for one-dimensional scattering, Arnold H. Kahn—77
 Preliminary calculations of wave functions and energy eigenvalues for He^+ in a rock salt lattice, E. F. Sieckmann—382(A)
 Quantum theory of interference effects in the mixing of light from phase-independent sources, U. Fano—539
 Book review: *Relativistic electron theory* by M. E. Rose; W. H. Furry—866
 Representation of the commutation relation, Peter Fong—852
 Unitary interpretation of quantum theory, Alfred Landé—503
 The use of high-frequency sound waves in the investigation of some electronic properties of metals, Arthur Myers—143
 Von-Neumann's hidden-parameter proof, James Albertson—478

Mechanics, statistical

Demonstration of diffusion, Eldred F. Tubbs—802(A)
 Development of the kinetic theory of gases V. The equation of state, Stephen Brush—593
 Dynamics of ionized gases, Bernard Steginsky—605
 Free expansion of an ideal gas, Robert W. Estin—340(A)
 Geometrical approach to the theory of probability, Dan McLachlan, Jr., and L. I. Chamberlain—385
 Introduction to the M-B, B-E, and F-D physical statistical distributions, Frank D. Enck—797(A)
 A simple argument for the temperature dependence of transport coefficients in imperfect gases, J. D. Harris and R. W. Christy—136(A)
 On the theory of condensation, Nobuhiko Saito—64(A)
 Thermodynamics, statistics, and information, L. Brillouin—318

Microwaves

Book review: *Fortschritte der Hochfrequenztechnik, Vol. 4* edited by J. Zenneck, M. Strutt, and F. Vilbig; Ernst K. Franke—864
 Design of microwave zone plates, Thomas B. Brown—569(A)
 Effect of flow on microwave breakdown in O_2 , J. G. Skinner and J. J. Brady—652(A)
 Reception in microwave horns, John J. Faris—380(T)
 Rolling ball analog for diode tubes at microwave frequencies, C. L. Andrews—134(A)

Modern physics

Apparatus drawings project. Apparatus for electron paramagnetic resonance at low fields, Robert G. Marcley—492

Apparatus drawings project. Apparatus for measuring the Rutherford scattering of alpha particles by thin metal foils, Robert G. Marcley—349

Apparatus drawings project. Classen's method e/m of electrons apparatus, Robert G. Marcley—26

Apparatus drawings project. Ionization chamber, Robert G. Marcley—845

Apparatus drawings project. Nuclear magnetic resonance absorption apparatus, Robert G. Marcley—451

Apparatus drawings project—Omegatron for undergraduate laboratory determination of the ratio e/m of the proton, Robert G. Marcley—86

Apparatus drawings project. Small x-ray tube developed for the undergraduate physics laboratories of the University of Washington, Robert G. Marcley—445

An apparatus for studies of high-voltage phenomena, Lane K. Branson—802(A)

Busch tube for determining e/m for the electron, H. V. Neher—471

A charged particle spectrometer for an undergraduate laboratory, B. Hogg, D. Kerr, and L. Reed—57

Classical electron "scattering" process, Harry F. Meiners and Stanley A. Williams—135(A)

Collisions of relativistic particles, Berol L. Robinson—369

Decade scaler for college laboratory use, Larry V. East and Paul A. Roys—307

Deuteronomy: Synthesis of deuterons and the light nuclei during the early history of the solar system, William A. Fowler, Jesse I. Greenstein and Fred Hoyle—393

A diffusion cloud chamber with a vacuum jacket, Anthony A. Silvilli and Donald Marn—99

Doppler effect in neutron absorption resonances, A. W. Solbrig, Jr. —257

Early work in electron diffraction, Sir George Thomson—821

Early work on the positron and muon, C. D. Anderson—825

Elastic scattering of deuterons, Dennis G. Hoffman—64(A)

Electron models and quantum mechanics, Richard Berry—798(A)

Emission and absorption by afterglowing nitrogen and oxygen in the extreme ultraviolet, Clifford E. Fairchild—379(A)

European organization for nuclear research CERN, R. H. Nussbaum—64(A)

An experiment in probability, C. J. Aitchison—855

Experiments on the angular momentum of a supercurrent and the possibility of a supercurrent gyroscope, A. C. Rose-Innes and G. M. Taylor—268

High-energy cosmic-ray experiments at balloon elevations, Don Cottrell—379(A)

Low-energy predictions of modified Yukawa potentials between two nucleons, D. B. Lichtenberg—357

Measurement of molecular diameters and average velocities, Robert E. Warner—736

A mechanical analog of magnetic resonance, R. A. Fowler and H. S. Story—709

Nonconservation of parity, P. Scott Smith—380(T)

On the recent past of physics, Gerald Holton—805

Optical pumping in metastable helium, Barry Kunz—798(A)

Photoelectric effect experiment, Sumner P. Davis—706

Production and detection of high energy particles, Akihiko Yokawa—380(T)

The scattering of x rays as particles, Arthur H. Compton—817

Steady-state nuclear polarizations via electronic transitions, Robert H. Webb—428

Student experiment on the attenuation of gamma radiation, H. W. Taylor and G. N. Whyte—315

Transistor alpha-particle detector, C. S. Ananiades and J. W. Dewdney—329

Uptodateness in the classroom, Fred Warburton—570(A)

Nuclear physics

Apparatus drawings project. Apparatus for measuring the Rutherford scattering of alpha particles by thin metal foils, Robert G. Marcley—349

Apparatus drawings project. Ionization chamber, Robert G. Marcley—845

Book review: *The principles of nuclear magnetism* by A. Abragam; L. C. Hebel—860

"Close-range" forces in the "Plum-pudding" model, M. S. McCay—654(A)

Determination of the binding energy of deuteron, Eddie Ortiz—575(A)

Deuteronomy: Synthesis of deuterons and the light nuclei during the early history of the solar system, William A. Fowler, Jesse I. Greenstein and Fred Hoyle—393

Discrimination between neutron and gamma-ray pulses in an anthracene scintillator, Marsongkohadi and M. T. McEllistrem—382(A)

Doppler effect in neutron absorption resonances, A. W. Solbrig, Jr. —257

Elastic scattering of deuterons, Dennis G. Hoffman—64(A)

Gamma-ray studies on sum peaks, Frank Blair—279(A)

Graphite exponential pile as a pedagogical device for studying anisotropic diffusion, Leo Seren—572(A)

Low-energy predictions of modified Yukawa potentials between two nucleons, D. B. Lichtenberg—357

The Mössbauer effect, Edwin J. Schillinger—868(A)

The Mössbauer effect, Harry Lustig—1

Neutron-proton mass difference from electric self-energy consideration, Anthony M. Lemos—867(A)

Nuclear reactor technology program for summer '61 at Jackson Junior College, Roderick D. Riggs—655(A)

Pulsed neutron experiments in the student laboratory, Lawrence Ruby—801(A)

Scattering of beta rays, Jos. P. Harper—797(A)

Students method for determining the binding energy of deuteron, Eddie Ortiz—684

Particles, elementary

Early work on the positron and muon, C. D. Anderson—825

Nonconservation of parity, P. Scott Smith—380(T)

Parity, Graham McCauley—173

Production and detection of high energy particles, Akihiko Yokawa—380(T)

Philosophy of science

A comment on "On teaching the philosophy of physics," Edgar A. Pearlstein—127(L)

A cooperative venture in the philosophy of science, Edward P. Clancy—95

Cooperative venture in the philosophy of science, Edward P. Clancy—572(A)

Further comment on the teaching of the philosophy of physics, Raymond J. Seeger—127(L)

Laws of physical laws, Mario Bunge—518

On prediction as a goal of physical theories, H. L. Armstrong—334(L)

The significance of the Mach principle, P. W. Bridgman—32

Unitary interpretation of quantum theory, Alfred Landé—503

Plasma physics

Dynamics of ionized gases, Bernard Steginsky—605

Emission of radio-frequency waves from plasmas, G. Bekeli and Sanbern C. Brown—404

Light emissions in early states of plasma formation, A. R. Tynes and J. J. Brady—652(A)

The positive column of an electronegative glow, D. S. Burch—64(A)

Wave propagation in a moving plasma, Frederick L. Scarf—101

Properties of matter

Effect of flow on microwave breakdown in O_2 , J. G. Skinner and J. J. Brady—652(A)

Efficiency of thermoelectric devices, Eric T. Gross—729

Observations on the thermal conductivity of carbon dioxide gas, Julius Sumner Miller—549(L)

On characteristics of materials and the Millikan oil-drop experiment, W. D. Foland—787

Simple method for determining Poisson's ratio dynamically, John S. Rinehart and William C. McClain—215(A)
With apologies to Mr. Boyle, Jerrett Rollins—279(A)

Reactors

Doppler effect in neutron absorption resonances, A. W. Solbrig, Jr.—257
Nuclear reactor technology program for summer '60 at Jackson Junior College, Roderick D. Riggs—655(A)

Relativity

The apparent shape of large objects at relativistic speeds, Mary L. Boas—283
Clock rates at perihelion and aphelion, Banesh Hoffmann and Wayne T. Sproull—640
Collisions of relativistic particles, Berol L. Robinson—369
Conformal coordinates associated with uniformly accelerated motion, Robert T. Jones—124
Erratum: Length contraction paradox, W. Rindler—859
Length contraction paradox, W. Rindler—365
Length contraction paradox, Willard H. Wells—858(L)
Note on Lorentz invariants, Mark Holzman—335
Observation of a time interval by a single observer, A. D. Crowell—370
Radiation pressure on a rapidly moving surface, W. Rindler and D. W. Sciama—643(L)
Radiation pressure on a rapidly moving surface, Richard Schlegel—645(L)
Radiation pressure on a relativistically moving mirror, James Terrell—644(L)
Regarding the observation of the Lorentz contraction on a pulsed radar system, C. W. Sherwin—67
Relativistic oscillator with natural forcing functions, I. U. Ojalvo—508
Relativity and parallel wires, David L. Webster—841
Relativity nomograph, C. W. Nelson—278(A)
The relativity of moving circuits and magnets, David L. Webster—262
Supplemental viewpoints of the relativistic length contraction and time dilation helpful to the teaching of introductory special relativity, R. H. Chow—634
Transverse mass and gravitational mass, Robert Katz—786
Uptodateness in the classroom, Fred Warburton—570(A)
Erratum: Vacuum electrodynamics on a merry-go-round, Jack L. Uretsky and John Ise—328

Reports, announcements and news

AAAPT high school awards program—715
Books and periodicals wanted for Latin America—657
Doklady to be issued monthly—356
Film appraisals requested, Robert I. Hulsizer—248
Harry Emmons Hammond, 1884-1961—392
"It is more blessed . . ." an editorial, Charles H. Schauer—633
Leon E. Smith—354
New standards for length and time—94
1962 International congress of the history of science—444
The 1960 visiting foreign staff project (V.F.S.P.) at Temple University, Elmer L. Offenbacher—137
OIS club scheme—660
Report of the membership committee for 1960, C. L. Andrews—714
Richtmyer Memorial Lecture—403
1962 Symposium on electromagnetic theory and antennas—458
ORINS summer symposium—366
Post-Doctoral research fellowships—458
Report of annual meeting of the national commission on teacher education and professional standards, San Diego State College, San Diego, California, June 21-25, 1960, Glenn Q. Leifer—331
Report of the editor for the year 1960, W. C. Michels—469
Reports on the San Francisco meeting of the acoustical society, R. W. Kenworthy—379(T)
Summer meeting at Stanford University, Stanford, California, Frank Verbrugge—799
Surplus property guide—23

Research and teaching

"It is more blessed . . ." an editorial, Charles H. Schauer—633
Research and its sponsorship in undergraduate college physics, Walter H. Kruschwitz—134(A)
Small colleges and physics research (editorial), J. Howard McMillen—272

Satellites

Elementary satellite thermal problems, G. D. Gordon—574(A)

Secondary school physics

Advanced placement in physics, John Noehl—652(A)
Comparative preparation of physics and mathematics high school teachers in NSF institutes, Leonard Muldawer—574(A)
On the education of physicists in Austria and Israel, Albert M. Goldfarb—161
The education of physicists in Sweden, K. G. Friskopp and Arne Eld Sandström—168
High school awards program—59
High school awards program—715
Hints for visiting scientists teaching in secondary schools, Malcolm Katz—57
International conference on physics education, Francis W. Sears—151
1960 visiting foreign staff project (V.F.S.P.) at Temple University, Elmer L. Offenbacher—137
Olin-Mathieson plan for high school science, Charles Williamson—574(A)
Performance in college physics of students with PSSC background, Frank Verbrugge—570(A)
PSSC physics, Kemp Bennett Kolb—791(L)
Special consultant at work, Margaret B. Lehman—573(A)
What a large school can do to stimulate their outstanding students in science, Robert E. Ansbaugh—340(A)
What a small school can do to stimulate their outstanding students in science, William A. Hill—340(A)

Social and economic aspects of science

Selling physics, Roger M. Morrow—380(T)
Small colleges and physics research, J. Howard McMillen—272

Solid-state physics

Acoustic attenuation measurements in NaCl, H. P. Mahon—380(A)
Activation energy of thin germanium films, B. Nichols and N. Mostovych—381(A)
Apparatus drawings project. Apparatus for electron paramagnetic resonance at low fields, Robert G. Marcley—492
Apparatus Drawings Project. Hall effect magnet, Robert G. Marcley—29
Basic semiconductor experiments, Raymond A. Daly and Bert J. Hill—571(A)
Effect of an aluminum oxide undercoating on the electrical properties of thin metallic films, C. T. Naber and N. Mostovych—381(A)
Fermi level demonstration, R. M. Warner—529
Field emission from silicon, R. L. Perry—64(A)
Hall effect in the general physics laboratory, Walter Eppenstein and Richard M. Heavers—574(A)
Hall mobility of holes in AgBr, R. C. Hanson—652(A)
The Mössbauer effect, Harry Lustig—1
A note on the frequency of ferromagnetic resonance, C. R. Buffler, M. W. Muller and R. H. Kantor—786
On the tight packing of spheres and associated problems in flat N-dimensional space, Edward F. Fahy—725
Paramagnetism: A key to the knowledge of chemical bonding, Juan A. McMillan—207
Photography of atomic lattices, Roger M. Wortman—464(A)
Simple charge motion demonstrator, H. S. Story—369(A)
Some properties of alkali halide crystals, E. A. Braun—182
Some properties of the bleaching of the colloidal band in silver chloride, Robert L. Martin—65(A)

Steady-state nuclear polarizations via electronic transitions, Robert H. Webb—428
 On the theory of condensation, Nobuhiko Saito—64(A)
 The use of high-frequency sound waves in the investigation of some electronic properties of metals, Arthur Myers—143

Sound

Acoustic attenuation measurements in NaCl, H. P. Mahon—380(A)
 Acoustical problems of physics lecture halls, R. S. Shankland—136(A)
 Anatomy of thunder, W. J. Remillard—573(A)
 Demonstration of Doppler effect, Hans Weltin—713(L)
 Effects of ultrasonics on the germination and development of seeds, Carl V. Bertsch—579(A)
 Electric organ as a teaching aid in the general college physics course, T. G. Bullen—372
 Hypervelocity studies, Jacques Charest—380(T)
 Influence of surface layers on sound absorption of open-celled flexible foams, Manuel Schwartz and Donald Janzen—380(A)
 The phenomenon of acoustic streaming and its effects on various processes, Robert K. Gould—798(A)
 The physical nature of shock propagation, William Band and George E. Duvall—780
 Role of gaseous cavitation in the nonlinear transmission of sound in liquids, Carl E. Adams—381(A)
 The use of high-frequency sound waves in the investigation of some electronic properties of metals, Arthur Myers—143

Teacher training

Comparative preparation of physics and mathematics teachers in NSF institutes, L. Muldawer—460(L)
 Comparative preparation of physics and mathematics high school teachers in NSF institutes, Leonard Muldawer—574(A)
 Graduate preparation of physics instructors for liberal arts colleges, George W. Crawford—573(A)
 Institutes in research techniques, Leonard Muldawer—276(L)
 On making lecture-recitation-laboratory work, Joseph W. Straley—654(A)
 The 1960 visiting foreign staff project (V.F.S.P.) at Temple University, Elmer L. Offenbacher—137
 Olin-Mathieson plan for high school science, Charles Williamson—574(A)
 Preliminary report of course offerings in institute programs sponsored by the National Science foundation, Alan T. Wager—573(A)
 Report of annual meeting of the national commission on teacher education and professional standards, San Diego State College, San Diego, California, June 21-25, 1960, Glenn Q. Lefter—331

Testing, theory and techniques

Laboratory performance testing, George C. Towe and Georgeanne R. Caughlan—777
 New forms of graduate record examination in advanced physics—859
 Nonsecret laboratory examinations—II, William P. Davis—788
 Objective-type tests for short daily quizzes, Marsh W. White—463(A)
 On maximizing the information obtained from science examinations written and oral, John R. Platt—111
 Open book examination as a deterrence to cheating, Lloyd B. Ham—639

Units, dimensions, and terminology

Astronomical unit as average earth-sun distance, Arthur I. Berman—572(A)
 Concerning the naming of some mechanics units, E. Scott Barr—655(A)
 Definitions of resonance for series and parallel LCR circuits, Edward J. Burge—19
 Graphical representation for unit systems, E. U. Condon—487
 Let's use the metric system, Henry J. Rozycski—380(A)
 New standards for length and time—94

Visual materials and methods

Are we asking the right questions? Francis T. Worrell—572(A)
 Demonstration of Brownian motion and other difficult phenomena on closed circuit television, Joseph A. Carr—571(A)
 Films for students of physics, Robert L. Weber—222
 More visual aids in the physics lecture, Walter Eppenstein—134(A)
 Projection cloud chamber for classroom demonstration, Robert G. Picard and Henry E. Mazurek—572(A)
 Report on the film program at Rensselaer Polytechnic Institute, Harry F. Meiners, Alan S. Meltzer, Charles C. Werberg and Guy Huse—803(A)

X rays

Apparatus drawings project. Small x-ray tube developed for the undergraduate physics laboratories of the University of Washington, Robert G. Marcy—445
 Apparatus for study of x-ray diffraction, Carl H. Hayn, S.J.—651(A)
 Experiment on Compton effect, Mario Iona—571(A)
 Further laboratory studies of the Compton effect, Chester V. Wells and Albert A. Bartlett—215(A)
 Light-optical analogs of x-ray diffraction patterns, Jurgen R. Meyer-Arendt and John K. Wood—341
 The scattering of x rays as particles, Arthur H. Compton—817
 Versatile curved-crystal spectograph for the x-ray physics laboratory, John E. Edwards—572(A)

